Sequences in the *Pol* Alignment

COMMON NAME	LOCUS	ACC #	FIRST AUTHOR	REFERENCE
SUBTYPE A:				
U455	HIVU455	M62320	Oram,J.D.	ARHR 6, 1073 (1990)
IBNG	HIVIBNG	L39106	Howard,R.M.	ARHR 10: 1755 (1994)
SUBTYPE B:				
SF2	HIVSF2	K02007	Sanchez-Pescador,R.	Science 227, 484 (1985)
LAI	HIVLAI	K02013	Wain-Hobson,S.	Cell 40, 9 (1985)
HXB2R	HIVHXB2R	K03455	Starcich,B.	Science 227, 538 (1985)
NL43	HIVNL43	M19921	Buckler,C.E.	JVI 59: 284 (1986)
NY5CG	HIVNY5CG	M38431	Theodore,T.	PNAS 83: 5038 (1986)
LW123	HIVLW123	U12055	Reitz,M.	ARHR 10, 1143 (1994)
MN	HIVMN	M17449	Gurgo,C.	Virol. 164, 531 (1988)
JRCSF	HIVJRCSF	M38429	Koyanagi,S.	Science 236: 819 (1987)
JRFL	HIVJRFL	M74978	O'Brien,W.A.	Nature 348, 69 (1990)
OYI	HIVOYI	M26727	Wain-Hobson,S.	AIDS 3: 707 (1989)
CAM1	HIVCAM1	D10112	McIntosh,A.	Unpublished (1991)
HAN	HIVHAN	U43141	Sauermann,U.	ARHR 6, 813 (1990)
D31	HIVD31	U43096	Dietrich,U.	Unpublished (1992)
RF	HIVRF	M17451	Starcich,B.R.	Cell 45, 637 (1986)
YU2	HIVYU2	M93258	Li,Y.	JVI 65, 3973 (1991)
BCSG3C	HIVBCSG3C	L02317	Ghosh,S.K.	Virol. 194, 858 (1993)
P896	HIVP896	M96155	Collman,R.	JVI 66, 7517 (1992)
RET7	HIVRET7	Z31355	Gurusinghe,A.	Unpublished (1994)
VE1RT	HIVVE1RT	U16765	Quinones-Mateu,M.E.	Unpublished (1995)
VE2RT	HIVVE2RT	U16767	Quinones-Mateu,M.E.	Unpublished (1995)
VE3RT	HIVVE3RT	U16769	Quinones-Mateu,M.E.	Unpublished (1995)
VE4RT	HIVVE4RT	U16771	Quinones-Mateu,M.E.	Unpublished (1995)
VE5RT	HIVVE5RT	U16773	Quinones-Mateu,M.E.	Unpublished (1995)
VE6RT	HIVVE6RT	U16775	Quinones-Mateu,M.E.	Unpublished (1995)
VE7RT	HIVVE7RT	U16777	Quinones-Mateu,M.E.	Unpublished (1995)
VE8RT	HIVVE8RT	U16779	Quinones-Mateu,M.E.	Unpublished (1995)
HX330BC	HIVHX330BC	U28653	Tachedjian,G.	Virol. In Press (1996)
HX660BC	HIVHX660BC	U28647	Tachedjian,G.	Virol. In Press (1996)
HXBCRT	HIVHXBCRT	U28646	Tachedjian,G.	Virol. In Press (1996)
PD165BC	HIVPD165BC	U28649	Tachedjian,G.	Virol. In Press (1996)
PD330BC	HIVPD330BC	U28650	Tachedjian,G.	Virol. In Press (1996)
PD495BC	HIVPD495BC	U28651	Tachedjian,G.	Virol. In Press (1996)
PD660BC	HIVPD660BC	U28652	Tachedjian,G.	Virol. In Press (1996)
PDBCRT	HIVPDBCRT	U28648	Tachedjian,G.	Virol. In Press (1996)
3202A12	HIV3202A12	U34603	Guillon,C.	ARHR 11, 1537 (1995)
3202A21	HIV3202A21	U34604	Guillon,C.	ARHR 11, 1537 (1995)
MANC	HIVMANC	U23487	Zhu,T.	Nature 3745, 503 (1995)
WEAU160	HIVWEAU160	U21135	Ghosh,S.	Unpublished (1995)

SUBTYPE D:				
ELI	HIVELI	K03454	Alizon,M.	Cell 46, 63 (1986)
Z2Z6	HIVZ2Z6	M22639	Theodore,T.	Unpublished (1988)
NDK	HIVNDK	M27323	Spire,B.	Gene 81, 275 (1989)
SUBTYPE O:				
ANT70C	HIVANT70C	L20587	Vanden Haesevelde,M.	JVI 68, 1586 (1994)
MVP5180	HIVMVP5180	L20571	Gurtler,L.G.	JVI 68, 1581 (1994)
SUBTYPE U:				
MAL	HIVMAL	K03456	Alizon,M.	Cell 46, 63 (1986)
CPZ:				
CPZGAB	SIVCPZGAB	X52154	Huet,T.	Nature 345, 356 (1990)
CPZANT	SIVCPZANT	U42720	Vanden Hasesevelde	Virol. In Press (1996)

HIV1 POL

Subtypes C and E-H are not currently represented in POL. The sequence MAL could not easily be assigned to any of the three POL subtypes, A, B, and D.

```
        gag ->
CONSENSUS-A   TTTTTTAGGGAA...AATTTGGCCTTCCA?CAAGGGGAGGCCAGG?AATTT..................     46
U455          ------------...--------------A---------------G-----..................     48
IBNG          ------------...--------------G---------------A-----..................     48

CONSENSUS-B   TTTTTTAGGGAA...gATCTGGcCtTCCcacAAGGGaAGGCcagggAAtTT???????????????????     48
SF2           ------------...-------------T----------------------..................     48
LAI           ------------...-------------T----------------------TCTTCAGAGCAGACCAGAG     67
HXB2R         ------------...-------------T----------------------..................     48
NL43          ------------...------------------------------------..................     48
NY5CG         ------------...------------------------------------..................     48
LW123         ------------...-------------T----------------------..................     48
MN            ------------...-------------TG-----------G...------..................     45
JRCSF         ------------...-------------T----------------------..................     48
JRFL          ------------...-------------T----------------------..................     48
OYI           ------------...------------------------------------..................     48
CAM1          ------------...A--------------------G--------------..................     48
HAN           ------------...---------------------G--------A-----..................     48
D31           ------------...-------------T----------------------..................     48
RF            ------------...A-------------------------------C--..................     48
YU2           ------------...------------------------------A-----..................     48
BCSG3C        ------------...------------------------------------..................     48
P896          ------------...A-----------------------------------..................     48
3202A12       ------------...------------------------------------..................     48
3202A21       ------------...------------------------------------..................     48
MANC          ------------...---------C--------------------------..................     48
WEAU160       ------------...-------T-------A--------------------..................     48

CONSENSUS-D   TTTTTTAGGGAa...gATTTGGCCTTCCCACAAGGGAAGGCCGGGGAAcTT..................     48
ELI           -----------G...A-----------------------------------..................     48
Z2Z6          ------------...------------------------------------..................     48
NDK           ------------...--------------------------------T--..................     48

CONSENSUS-O   TTTTTTAGG?AA...?TACTGGCCTCCGGGGGGCACGAGGCCAGGCAATTA..................     46
ANT70         ---------C--...A-----------------------------------..................     48
MVP5180       ---------G--...G-----------------------------------..................     48

CONSENSUS-U   TTTTTTAGGGAA...AATTTGGCCTTCCCACAAGGGAAGGCCAGGGAATTT..................     48
MAL           ------------...------------------------------------..................     48

CONSENSUS-CPZ TTTTTTAGGGAA???????????C?T???G??G??G?AG?CCAGG?AACTT..................     29
CPZGAB        ------------...AGGTTGGC-T-CCC-CA-CG-G--G-----C-----..................     48
CPZANT        ------------ACCGACCCCCA-G-GGT-GG-GT-C--A-----G-----..................     51
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CONSENSUS-A   ................TCCTCAGAG......CAGACC?GA?CCAACAGC?CCACCAGCAGA?A?CTTTG     88
U455          ................---------.....------A--G--------C-----------A-T-----     95
IBNG          ................---------.....------G--A--------T-----------G-G-----     95

CONSENSUS-B   ?????????????????tCtTCAGag......CAGAccAGAgCCAACAGCcCCAcCAGaagAGAGCtTCa     95
SF2           ................---------.....--------------------------------------     95
LAI           CCAACAGCCCCACCATT---------.....--------------------------------------    131
HXB2R         ................---------.....--------------------------------------     95
NL43          ................---------.....--------------------------------------     95
NY5CG         ................---------.....--------------------------------------     95
LW123         ................---------.....--------------------------------------     95
MN            ................--C------.....----A---------------------------------     92
JRCSF         ................C--------.....--------------------------------------     95
JRFL          ................---------.....----------------------------A---------     95
OYI           ................--------A......-------------------------C----------G     95
CAM1          ................---------.....--------------------------------------     95
HAN           ................---------.....--------------------------------------     95
D31           ................-------C-.....--------------------------------------     95
RF            ................---------.....--------------------------------------     95
YU2           ................---------.....----------------------T-----------G---     95
BCSG3C        ................--C------.....-----T------------T-------------------     95
P896          ................---------.....--------------------------------------     95
3202A12       ................---------.....--------------------------------------     95
3202A21       ................---------.....--------------------------------------     95
MANC          ................---------.....---------------------------G----------     95
WEAU160       ................--C------.....-----T---A----------------------------     95

CONSENSUS-D   ................TCTtCAgAG......CAGACCAGAGCCAACAGCCCCACCAGCAGAGAGCTTCG     95
ELI           ................---C--A--......--------------------------------------     95
Z2Z6          ................---------.....--------------------------------------     95
NDK           ................---------.....--------------------------------------     95

CONSENSUS-O   ................TGTGCAGA?......AC?AG????CCCATCAGCCCCACC?AT...........     75
ANT70         ................--------G.......--C--CACA---------------G--...........     84
MVP5180       ................--------A.......--A--TGTC---------------A--...........     84

CONSENSUS-U   ................CCTTCAGAG......CAGACCAGAGCCAACAGCCCCACCAGCAGAGAGCTTCG     95
MAL           ................---------.....--------------------------------------     95

CONSENSUS-CPZ ................TGTGCAGAA?????????A???GA?CCAAC?GC?CCACC?ATAGAGA??TAT?     63
CPZGAB        ................---------......CAG-ACA--A-----G--C-----G-------GT---G     95
CPZANT        ................---------GGAGGAAGT-GTG--G-----A--T-----C-------TC---C    104
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HIV1 POL

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CONSENSUS-A   GGATGGGGGAA?AGAT??C???...CTC?CC.........?????A?CAGGA?C?GA??GA......CA?    122
U455          -----------A----GA-.......---C--.........TGCGA-A-----G-T--AA--........--G    144
IBNG          -----------G----AC-TCC...---T--............AC-G-----A-C--GG--........--A    144

CONSENSUS-B   GGTttgGgGaaGagacaacAaCTCCctcTCA???????????GAAGCAGGAgccgatAGA......CAA    147
SF2           ----------G----A--------------.............------------------.......---    147
LAI           ---C-----T--------------------.............------------------.......---    183
HXB2R         ---C-----T----------------C----.............------------------.......---    147
NL43          -------------------------------.............------------------.......---    147
NY5CG         -------------------------------.............------------------.......---    147
LW123         ---C-----T----------------C----.............------------------.......---    147
MN            --------------------------A---GAAGCAGGAGAA----------A-------.......---    156
JRCSF         -----------------G-------------GAAGCAGGAGCA-------------------.......---    159
JRFL          -----------------G-------------.............------------------.......---    147
OYI           --------------------------C----.............------------------.......---    147
CAM1          ---------------A--------------.............------------------.......---    147
HAN           ------------C..----G----------.............------------------.......---    144
D31           -----------------G---------T---.............------------------.......---    147
RF            -----------------...------------.........----------AA-----.......---    144
YU2           -------A-----------------------.............------------------.......---    147
BCSG3C        ----------G----------------C----...........-----------G-GA---.......---    147
P896          ----------G-------------------.............------------------.......---    147
3202A12       -------------------------------.............--------------GG--.......---    147
3202A21       -------------------------------.............--------------GG--.......---    147
MANC          -------------------------TG----...........---------A--------.......---    147
WEAU160       ----CA------------------------.............------------A-----.......---    147

CONSENSUS-D   GGTTTGGGGAaGAGAT...AACCCCCTCTCA...........gAAACAGGAGCAGAAAGA......CAA    144
ELI           -----------------...------------............A------------------.......---    144
Z2Z6          -----------------...------------.............------------------.......---    144
NDK           ----------G-----...------------.............------------------.......---    144

CONSENSUS-O   ....GGAGGAGG?AGTGAA...............GG?ACA?GAGAATCAG???CAGAA?GGGG??C?G?A    115
ANT70         ....--------A------................--G---G---------GAA-----A----GC-C-A-    135
MVP5180       ....--------C------................--A---A---------AGT-----G----AT-A-G-    135

CONSENSUS-U   GGTTTGGGGAGGAGATAAA...ACCCTCTCA...........GAAACAGGAGCAGAAAGA......CAA    144
MAL           -------------------...---------............------------------.......---    144

CONSENSUS-CPZ ?G?A??AG?A??A???GA?????????????...........??????????????????????????A?     72
CPZGAB        G-T-CC--G-GG-AGA--A........................GAGCCAGGAGAAGAAAGAGGGAGAG-G    141
CPZANT        A-G-GG--C-CA-GAG--CTCAGAAGGGTCT.................................C-A    138
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                                          \/ protease                          <- gag cds
CONSENSUS-A   GG????......A?A??CTCCTTTA??TTCCCTCAAATCACTCTTTGGCAACGACCC?T?GT?ACAGTAA    174
U455          --A.........-C-GA--------GT------------------------------C-T--C-------    205
IBNG          --GGCT......-T-TC--------AC------------------------------T-A--T-------    208

CONSENSUS-B   GGa.........acTGTATCCtTTAgCtTCCCTCAgatCACTCTTTGGCAaCGACCCcTcGTCACAaTAA    208
SF2           ---.........-------------A-------------------------------------------    208
LAI           ---.........-------------A-------------------------------------------    244
HXB2R         ---.........-------------A----------G--------------------------------    208
NL43          ---.........--------------------------------------G-------------------    208
NY5CG         ---.........--------------------------------------G-------------------    208
LW123         ---.........-------------A-------------------------------------------    208
MN            ---.........C----------------------A---------------------A-T----------    217
JRCSF         ---.........-T-----------A-------------------------------------------    220
JRFL          ---.........-A-----------A-------------------------------------------    208
OYI           --G.........-------------A-C-----------------------------A------------    208
CAM1          ------------------------------------------------------------------    208
HAN           ---.........---------C-----C-------A--------------G-------------------    205
D31           ---.........------------------------------------------------------    208
RF            ---.........----------------------A---------------------A--------G---    205
YU2           ---.........--------------------------------------G-------------------    208
BCSG3C        ---.........-A-------C-----------------------------------------------    208
P896          ---.........---------C-----------------------------------------------    208
3202A12       ---.........---------C-----C-----------------------------------------    208
3202A21       ---.........---------C-----C-----------------------------------------    208
MANC          ---.........---------C---------------C--------------------------------    208
WEAU160       ---.........G------------A---------A--------------------------------    208

CONSENSUS-D   GGA.........ACTGTATCCTTtAaCTtCCCTCAAATCACTCTTTGGCAACGACCCCTtGTcaCAATAA    205
ELI           ---.........-----------------------------------------------------G------    205
Z2Z6          ---.........-----------C----G--------------------------------T-------    205
NDK           ---.........-------------G--------------------------------C----------    205

CONSENSUS-O   ?GA.........GCT?TA?CC?TTTGCCTCCCTCAAATCCCTCTTTGGGACAGACCAATAGT?ACAGCAA    171
ANT70         C--........---C--T--G---------------------------------------T-------    196
MVP5180       A--........---G--C--A---------------------------------------C-------    196

CONSENSUS-U   GGA.........ATTGTATCCTTTAGCTTCCCTCAAATCACTCTTTGGCAACGACCAGTTGTCACAGTAA    205
MAL           ---.........------------------------------------------------------    205

CONSENSUS-CPZ ??G??????????CTA??TCC??C????TCCCT?AAATC?CTCTTTGGCA??GACC??T?AT???AGT??    110
CPZGAB        CA-.........T---TA---AC-AACC-----C-----A----------GC----CC-C--CCC---AA    202
CPZANT        GG-GGAGGAGGAA---CC---CT-GTAT-----G-----C----------AA----AA-G--GGA---TC    208
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HIV1 POL

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CONSENSUS-A   ?AATAG??GGACAGCT?ATAGAAGC?CTATTAGA?ACAGGAGCAGATGATACAGT?TTAGAAGACATAAA   237
U455          A-----GA--------G--------T--------T--------------------C--------------   275
IBNG          G-----AG--------A--------C--------C--------------------A--------------   278

CONSENSUS-B   agaTAGgGGGGCAAcTaAAgGAaGCTCTATTAGATACAGGAGCAGATGATACAGTAtTAGaAGAaATGaa   278
SF2           G-------------------------------------------------------------------   278
LAI           ----------------------------------------------------------------------G   314
HXB2R         ----------------------------------------------------------------------G   278
NL43          --------------T-------------------------------------------------------   278
NY5CG         --------------T-------------------------------------------------------   278
LW123         ----------------------------------------------------------------------G   278
MN            ------------------------------------------------------------G---------   287
JRCSF         -------------------------------------------------------------------C---G-   290
JRFL          -------------------------------------------------------------------C---G-   278
OYI           -------------------A-----------------------------------------------------   278
CAM1          ----------------------------------------------------------------------   278
HAN           -------------------------------------------------------G------------G   275
D31           --------------T-------------------------------------------------------G   278
RF            --------------T-------------------------------------------------------   275
YU2           ----------------------------------------------------------------------   278
BCSG3C        ----------------------G----------------------------------------------   278
P896          -AG-----------------------------------------------------------------C----G   278
3202A12       ----------------------------------------------------------------------   278
3202A21       ----------------------------------------------------------------------   278
MANC          -A--------------------------------------------------------------------   278
WEAU160       ------A---------G-----------------------------------------------C-----   278

CONSENSUS-D   AaATAGGGGGACAGCTAAAGGAAGCTCTATTAGATACAGGAGCAGATGATACAGTATTAGAAGAAATgAA   275
ELI           ----------------------------------------------------------------------   275
Z2Z6          ----------------------------------------------------------------------   275
NDK           -G-------------------------------------------------------------------A--   275

CONSENSUS-O   ??GTTGGGGG?CA?CTATGTGA?G?TTT?CTGGATACAGG?GCAGATGA?ACAGTA?TAAA?AACATACA   230
ANT70         GA--------C--C--------A-T---G-----------A--------C------C----C--------   266
MVP5180       AG--------T--T--------G-C---A-----------G--------T------T----T--------   266

CONSENSUS-U   GAGTAGGAGGACAGCTAAAAGAAGCTCTATTAGACACAGGAGCAGATGATACAGTATTAGAAGAAATAAA   275
MAL           ----------------------------------------------------------------------   275

CONSENSUS-CPZ ???TA?A?GG?CAA??ATGT?A?GCT?T??TAGATACAGGAGCTGATGA?ACAGTA?TAGAG?GAAT?CA   163
CPZGAB        AAG--G-A--G---CT----G-A---T-GC-------------------T------A-----A----A--   272
CPZANT        TCA--C-G--A---AA----C-G---C-AT-------------------C------G-----G----T--   278
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CONSENSUS-A   TTT?CCAGGAAAATGGAAACCAAAAAT?ATAGGGGGAATTGGAGGTTTTATCAAAGTAAGACA?TATGAT   304
U455          ---G-----------------------A-----------------------------------G------   345
IBNG          ---A-----------------------G-----------------------------------A------   348

CONSENSUS-B   TTTGCCAgGaAgATGGAAaCCAAAAATGATAGGgGGAATTGGAGGTTTTATCAAAGTaaGACAgTAtGAt   348
SF2           -----------A-------------------------------------------------------C---   348
LAI           ------------------------------------------------------------------------   384
HXB2R         ------------------------------------------------------------------------   348
NL43          ------------------------------------------------------------G-----------   348
NY5CG         ------------------------------------------------------------------------   348
LW123         ------------------------------------------------------------------------   348
MN            -------A----------------------------------------------------------------   357
JRCSF         ------------------------------------------------------------------------   360
JRFL          ------------------------------------------------------------------A------   348
OYI           ------------------------------------------------------------------------   348
CAM1          ------------------------------------------------------------------------   348
HAN           ---------------------------------A--------------------------------------   345
D31           ------------------------------------------------------------------------   348
RF            -----------A-----------------------------------------------G------------   345
YU2           ------------------------------------------------------------------------   348
BCSG3C        ---------G--------G-----------------------------------------------------   348
P896          ------------------------------------------------------------------------G  348
3202A12       ------------------------------------------------------------G---------   348
3202A21       ---------------------------------------------G------------------------   348
MANC          ------------------------------------------------------------G------------   348
WEAU160       ---------G-A------------------------------------------------------------   348

CONSENSUS-D   TTTGCCAGGAAAATGGAAaCCAAAAATGATAGGGGGAATTGGAGGTTTTATCAAAGTAAGACAGTATGAT   345
ELI           ------------------------------------------------------------------------   345
Z2Z6          ------------------------------------------------------------------------   345
NDK           ------------------G-----------------------------------------------------   345

CONSENSUS-O   ATT?GAAGGAA?ATGGA?ACCAAAAATGATAGGGGGTATAGGAGG?TTTATAAAAGTAAAAGA?TAT?A?   293
ANT70         ---G-------A-----A---------------------------T-----------------A---G-T   336
MVP5180       ---A-------G-----C---------------------------C-----------------G---A-C   336

CONSENSUS-U   TTTGCCAGGAAAATGGAAACCAAAAATGATAGGGGGAATTGGAGGTTTTATCAAAGTAAGACAGTATGAT   345
MAL           ------------------------------------------------------------------------   345

CONSENSUS-CPZ ?TT?CAAGGA???TGGAA?CCAAAAA??AT?GG?GGAATTGG?GGTTTTAT????GT??AACA?T?T?A?   212
CPZGAB        A--A------CTT-----A-------TG--A--A--------A--------CAAA--CA----A-T-G-T   342
CPZANT        T--G------AAC-----G-------CA--T--T--------G--------TTCC--AC----G-A-A-C   348
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HIV1 POL

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CONSENSUS-A   CA?ATACTTATAGAAATTTGTGGAAAAAAG?C?ATAGGTACAGTATT?GTAGGACCTACACCTGTCAACA    370
U455          --G---------------------------A-T--------------G----------------------    415
IBNG          --A---------------------------G-C--------------A----------------------    418

CONSENSUS-B   CAgaTActcaTAGaaATcTGtGGACATAAAGCTatAGGTACAGTATTAGTAGGACCTACACCTGTCAACA    418
SF2           -------CTG--------------------------------------------------------------    418
LAI           ------------------------------------------------------------------------    454
HXB2R         ------------------------------------------------------------------------    418
NL43          --------------------C---------------------------------------------------    418
NY5CG         --------------------C---------------------------------------------------    418
LW123         ------------------------------------------------------------------------    418
MN            ------AC-----G----------------------------------------------------------    427
JRCSF         -------C------T------------------G-----------------------------------    430
JRFL          ------------------------------------------------------------------------    418
OYI           ------------------------------------------------------------------------    418
CAM1          -------C----------------------------------------------------------------    418
HAN           ---------G--------------------------------------------------------------    415
D31           --------------------C---------------------------------------------------    418
RF            --A---------------------------------------------------------------------    415
YU2           -------C---------A------------------------------------------------------    418
BCSG3C        -------C----------------------------------------------------------------    418
P896          ------GA--------------------------A-----------------------------------    418
3202A12       ------GC----------------------------------------------------------------    418
3202A21       -------C----------------------------------------------------------------    418
MANC          ------------------------------------------------------------------------    418
WEAU160       ---G---C----------------------------------------------------------------    418

CONSENSUS-D   CAAATACtCATAGAAATCTGTGGacAtAAAGCTATaGGTACAGTATTAGTAGGACCTACaCCTGTCAACA    415
ELI           -------C------------------G--------------------------------G----------    415
Z2Z6          ----------------------G-------------------------------------------------    415
NDK           ------------------------T----------G-----------------------------------    415

CONSENSUS-O   AATGTGACAGTAGAA?TA?AAGGAA?GGA?GTACAGGGAACAGTATTGGTGGGACCTACTCCTGTTAATA    359
ANT70         ---------------A--G------G---G----------------------------------------    406
MVP5180       ---------------G--C------A---A----------------------------------------    406

CONSENSUS-U   CAAATACTTATAGAAATTTGTGGAAAAAAGGCTATAGGTACAATATTGGTAGGACCTACACCTGTCAACA    415
MAL           ------------------------------------------------------------------------    415

CONSENSUS-CPZ AA?GTAC?CATA?A?AT?G?AG??AG?A?AGTA?TAG??ACAGTA?T??T?GGACCAA??CC?GTAAA?A    261
CPZGAB        --T----A----G-G--A-A--GG--A-A----G---GG------T-AG-A-------CA--T-----T-    412
CPZANT        --A----C----C-A--T-G--AC--G-C----C---CA------C-GT-G-------AC--A-----C-    418
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                                                 protease \/ p66, p51
CONSENSUS-A   TAATTGGA?G?AATATGTTGACTCAGATTGGTTGTACTTTAAATTTTCCAATTAGTCCTATTGAAACTGT    438
U455          --------A-G-------------------------------------------------------------    485
IBNG          --------C-A-------------------------------------------------------------    488

CONSENSUS-B   TAATTGGAAGAAATcTGTTGACTCAGaTTGGtTGcACTtTAAATTTtCCcATTAGtCCTATTGAaACTGT    488
SF2           ----------------------------------T-----------C-----------------------    488
LAI           ------------------------------------------------------------------------    524
HXB2R         -------------------------------------------------------C--------G-----    488
NL43          -------------------------------C-------------------------------G-----    488
NY5CG         -------------------------------C-------------------------------G-----    488
LW123         -------------------------------------------------------C--------G-----    488
MN            --------------------------C----G-------------------------------------    497
JRCSF         ------------------------------------------------------------------------    500
JRFL          ------------------------------------------------------------------------    488
OYI           --------------------------C-------T-----------------------------------    488
CAM1          -------------------------------C--T--------------T--------------------    488
HAN           ------------------------------------------------------------------------    485
D31           --------------T---------------------------------------------------------    488
RF            ------------------------------------------------------------------------    485
YU2           ------------------------------------------------------------------------    488
BCSG3C        ---------------------------------------C------------------------------    488
P896          ------------------------------------------------------------------------    488
RET7                                                            -----------------------     23
VE1RT                                                           -----------------------     23
VE2RT                                                           -----------------------     23
VE3RT                                                           -----------------------     23
VE4RT                                                           -----------------------     23
VE5RT                                                           -----------------------     23
VE6RT                                                           -----------------------     23
VE7RT                                                           -----------------------     23
VE8RT                                                           -----------------------     23
HX330BC                                                         --------C--------G-----     23
HX660BC                                                         --------C--------G-----     23
HXBCRT                                                          --------C--------G-----     23
PD165BC                                                         -----------------------     23
PD330BC                                                         -----------------------     23
PD495BC                                                         -----------------------     23
PD660BC                                                         -----------------------     23
PDBCRT                                                          -----------------------     23
3202A12       ------------------------------------------------------------------------    488
3202A21       -----------------------------------T------------------------------------    488
MANC          --------------T-------------------------------A--------------------------    488
WEAU160       -------------------------------C----------------------------------------    488

CONSENSUS-D   TAATtGGAAGAAATTTGTTGACCCAGATTGGCTGCACTTTAAATTTTCCAATTAGTCCTATTGAAACTGT    485
ELI           ----C-------------------------------------------------------------------    485
Z2Z6          ------------------------------------------------------------------------    485
NDK           ------------------------------------------------------------------------    485

CONSENSUS-O   TT?TTGG?AGAAA?ATATTGACAGGATTAGG?TGTACACTAAA?TTCCCTATAAG?CCCATAGCCCCAGT    423
ANT70         --A----A-----T-----------------T-----------C-----------C--------------    476
MVP5180       --C----G-----C-----------------A-----------T-----------T--------------    476

CONSENSUS-U   TAATTGGACGAAATATGTTGACTCAGATTGGTTGTACTTTAAATTTTCCAATTAGTCCTATTGAGACTGT    485
MAL           ------------------------------------------------------------------------    485

CONSENSUS-CPZ T?AT?GG?AGAAAT?TTTT????C??TT?GG?TGTACT?TA???TT?CCAATTAGT??A?TTGAAAC?GT    310
CPZGAB        -A--T--A------A----GACA-AA--G--T------C--GTG--C---------TC-A-------T--    482
CPZANT        -T--A--T------G----ATGT-TT--A--A------T--AAT--T---------AA-G-------A--    488
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HIV1 POL

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CONSENSUS-A   ?CCAGTAAAATTAAA?CCAG?AATGGATGGCCCAAAGGTTAAACAATGGCCATTGACAGAAGA?AAAATA   504
U455          A--------------A----A-------------------------------------------G------   555
IBNG          G--------------G----G-------------------------------------------A------   558

CONSENSUS-B   ACCAGTaAAaTTAAAGCCAGGAATGGATGGcCCaAAAGTtAAaCAATGGCCATTGACAGAaGAaAAAATA   558
SF2           ------------------------------------------G----------------------------   558
LAI           ------------------------------------------------------------------------   594
HXB2R         ------------------------------------------------------------------------   558
NL43          ------------------------------------------------------------------------   558
NY5CG         ------------------------------------------------------------------------   558
LW123         ------------------------------------------------------------------------   558
MN            ------------------------------------------------------------------------   567
JRCSF         ----------------------------------------C-------------------------------   570
JRFL          ----------------------------------------C-------------------------------   558
OYI           ------------------------------------------------------------------G------   558
CAM1          ------G-----------------------------------------------------------------   558
HAN           ------------------------------------------------------------------------   555
D31           ------------------------------------------------------------------------   558
RF            ------------------------------------------------------------G---------   555
YU2           ------------------------------------------------------------------------   558
BCSG3C        ------------------------------------------------------------------------   558
P896          -------------------------------T--------G-------------------------------   558
RET7          ------------------------------------------------------------------------    93
VE1RT         ------------------------------------------------------------------------    93
VE2RT         -------------------------------T--T--------G---------------------------    93
VE3RT         ------------------------------------------------------------------------    93
VE4RT         ------------------------------------------------------------------------    93
VE5RT         ------------------------------------------------------------------------    93
VE6RT         ------------------------------------------------------------G---------    93
VE7RT         ---------G--------------------------------------------------------------    93
VE8RT         ------------------------------------------G---------------------------    93
HX330BC       ------------------------------------------------------------------------    93
HX660BC       ------------------------------------------------------------------------    93
HXBCRT        ------------------------------------------------------------------------    93
PD165BC       ------------------------------------------------------------------------    93
PD330BC       ------------------------------------------------------------------------    93
PD495BC       ------------------------------------------------------------------------    93
PD660BC       ------------------------------------------------------------------------    93
PDBCRT        ------------------------------------------------------------------------    93
3202A12       ------------------------------------------------------------------------   558
3202A21       ------------------------------------------------------------------------   558
MANC          ----------------------------------------C-------------------------------   558
WEAU160       ------------------------------------------------------------------G------   558

CONSENSUS-D   ACCAGTAAAATTAAAGCCAGGAATGGATGGCCCAAAAGTTAAACAATGGCCATTGACAGAAGAAAAAATA   555
ELI           ------------------------------------------------------------------------   555
Z2Z6          ------------------------------------------------------------------------   555
NDK           ------------------------------------------------------------------------   555

CONSENSUS-O   GCCAGTAAA?CTAAAACCAGGAATGGATGGACCAAAAGTAAAACAATGGCCCCTATCTA?AGA?AAAATA   490
ANT70         ---------A----------------------------------------------A---A------   546
MVP5180       ---------G----------------------------------------------G---G------   546

CONSENSUS-U   ACCAGTAAAATTAAAGCCAGGGATGGATGGCCCAAGGGTTAAACAATGGCCATTGACAGAAGAAAAAATA   555
MAL           ------------------------------------------------------------------------   555

CONSENSUS-CPZ ?CC?GT?AAATT?AAA??AGGAATGGATGG?CCAA??GTAAA?CAATGGCC??T?TCA??AGA?AAAAT?   363
CPZGAB        C--A--C-----G---CC------------T----AG-----G--------CT-A---GC---A-----T   552
CPZANT        G--C--T-----A---GA------------A----GA-----A--------GC-C---AA---G-----A   558
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CONSENSUS-A   AAAGCATTAACAGA?ATTTGTA??GAGATGGAAAAGGAAGGAAAAATTTCAAAAATTGG?CCTGAAAATC   570
U455          --------------A-------AT-----------------------------------G----------   625
IBNG          --------------C-------CA-----------------------------------A----------   628

CONSENSUS-B   AAaGcaTTagtaGAaATtTGTACagAaaTGGAaAAGGAAGGgAAaATTTCaAAAaTTGGgCCTGAaAAtC   628
SF2           --------------G--A-------------------------------------------------------   628
LAI           ------------------------------------------------------------------------   664
HXB2R         --------------------------G---------------------------------------------   628
NL43          ------------------------------------------A---------------------------   628
NY5CG         ------------------------------------------A---------------------------   628
LW123         ------------------------------------------------------------------------   628
MN            ---------A--------------------------------------------------------------   637
JRCSF         ------------------------------------------A--G------------------------   640
JRFL          ------------------------------------------------------------------------   628
OYI           ----T----A-------------------------------------------G---------------   628
CAM1          ------------------------------------------A---------------------------   628
HAN           ---------A--------------------------------------------------------------   625
D31           ------------------------------------------------------------------------   628
RF            --------G--------------------------------A--------C-------------------   625
YU2           ------------------------------------------------------------------------C-   628
BCSG3C        ---------------------------------------------G------------------------   628
P896          ------------------------------------------A-----------------------G----   628
RET7          -----T-----------------------------------A---------------------------   163
VE1RT         ---------AC------------TA----------------------------------------------   163
VE2RT         ---------------------------C------------------------------------------   163
VE3RT         -----------G-----C--------G-----G--------------------------------------   163
VE4RT         ---------A-----------------C------------------------------------------   163
VE5RT         --G----------------------------G--------A-----------------A----------   163
VE6RT         --------G--------------------------------A---------------------------   163
VE7RT         ------------------------------------------A---------------------------   163
VE8RT         ------------------------------------------------------------------------   163
HX330BC       --------------------------G---------------------------------------------   163
HX660BC       --------------------------G---------------------------------------------   163
HXBCRT        --------------------------G---------------------------------------------   163
PD165BC       ------------------------------------------------------------------------   163
PD330BC       ------------------------------------------------------------------------   163
PD495BC       ------------------------------------------------------------------------   163
PD660BC       ------------------------------------------------------------------------   163
PDBCRT        ------------------------------------------------------------------------   163
3202A12       ------------------------------------------------------------------------   628
3202A21       ------------------------------------------------------------------------   628
MANC          ------------------------------------------------------------------------   628
WEAU160       ------------------------------------------A---------------------------   628

CONSENSUS-D   AAAGCATTAACAGAAATTTGTACAGAaATGGAAAAGGAAGGAAAAATTTCAAGAaTTGGGCCTGAAAATC   625
ELI           --------------------------T---------------------------------------------   625
Z2Z6          ------------------------------------------------------G---------------   625
NDK           ------------------------------------------------------------------------   625

CONSENSUS-O   GAAGC??T?AC?GCAATATGTCA?GAAATGGAACA?GAAGGAAAAAT?TCAAGAATAGGACCTGAAAATC   553
ANT70         -----CT-G--A-----------G-----------A-----------T----------------------   616
MVP5180       -----AC-A--T-----------A-----------G-----------C----------------------   616

CONSENSUS-U   AAAGCATTAACAGAAATTTGTAAAGATATGGAAAAGGAAGGAAAAATTTTAAAAATTGGGCCTGAAAATC   625
MAL           ------------------------------------------------------------------------   625

CONSENSUS-CPZ ?A?GCC?TAA?AGAAATTTGT?A??A??T?GAA???GAA???AA?AT?TC?A?AATAGG?CC?GA?AA?C   409
CPZGAB        A-A---T---C----------C-AG-AA-G---AAG---GGG--A--A--G-A------A--T--A--T-   622
CPZANT        G-G---C---A----------G-TA-GT-A---GCA---AAT--G--T--T-G------G--A--T--C-   628
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HIV1 POL

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CONSENSUS-A   CATACAATACTCCAGTATTTGC?ATAAAGAAAAAGGA?AG?ACTAAATGGAG?AAATTAGTAGATTTCAG    636
U455          ----------------------T--------------C--C-----------G-----------------    695
IBNG          ----------------------C--------------T--T-----------A-----------------    698

CONSENSUS-B   CATAcAATACtCCagTaTTtGCcATAAAGAAAAAaGAcAGTACTAAATGGaGaAAAtTAGTAGAtTTcAG    698
SF2           ----------------------T----------------------------------C-------------    698
LAI           ------------------------------------------------------------------------    734
HXB2R         ------------------------------------------------------------------------    698
NL43          ------------------------------------------------------------------------    698
NY5CG         ------------------------------------------------------------------------    698
LW123         ------------------------------------------------------------------------    698
MN            ------------------------------------------------------------------------    707
JRCSF         ------------------------------------------------------------------------    710
JRFL          ------------------------------------G-----------------------------------    698
OYI           ------------------------------------------------------------------------    698
CAM1          ------------------------------------------------------------------------    698
HAN           ------------------------------------G-----------------------------------    695
D31           ------------------------------------------------------------------C--T--    698
RF            ------------------------------------------------------------------------    695
YU2           ------------------------------------------------------------------------    698
BCSG3C        ----------------------T-------------------------------------------------    698
P896          ------------------------------------------------------------------------    698
RET7          ----------------------T-------------------------------------------------    233
VE1RT         --------------A-------------------G-----------------------------------    233
VE2RT         ----T--------------C-------------------------------------------------    233
VE3RT         ------------------------------------T-----------------------------------    233
VE4RT         ------------------------------------------------------------------------    233
VE5RT         ----------------------T-------------------------------------------------    233
VE6RT         ----T--------T--------------------------------------------------------    233
VE7RT         ------------------------------------G---------------C-G-----------------    233
VE8RT         ----------------G-----------------------------------------------------    233
HX330BC       ------------------------------------------------------------------------    233
HX660BC       ------------------------------------------------------------------------    233
HXBCRT        ------------------------------------G-----------------------------------    233
PD165BC       ------------------------------------------------------------------------    233
PD330BC       ------------------------------------------------------------------------    233
PD495BC       ------------------------------------------------------------------------    233
PD660BC       ------------------------------------------------------------------------    233
PDBCRT        ------------------------------------------------------------------------    233
3202A12       ----T------------------------------------------G-----------------------    698
3202A21       ----T------------------------------------------G-----------------------    698
MANC          ----------C-------------------------------------------------------T--    698
WEAU160       ----T-------------------------------------------------------------------    698

CONSENSUS-D   CATAcAATACTCCaATATTTGCCATAAAGAAAAAAGACAGTACCAAGTGGAGAAAATTAGTAGATTTCAG    695
ELI           ------------------------------------------------------------------------    695
Z2Z6          -------------C----------------------------------------------------------    695
NDK           ----T-------------------------------------------------------------------    695

CONSENSUS-O   CTTATAATACACCTAT?TTTGCTATAAAAAAGAAAGAT?G?ACTAA?TGGAGAAAATTGGTAGA?TT?AG    617
ANT70         ----------------C---------------------G-T-----A-----------------T--T--    686
MVP5180       ----------------T---------------------A-C-----G-----------------C--C--    686

CONSENSUS-U   CATACAATACTCCAGTATTTGCCATAAAGAAAAAAGACAGCACTAAATGGAGAAAATTAGTGAATTTCAG    695
MAL           ------------------------------------------------------------------------    695

CONSENSUS-CPZ CATACAATAC?CC?ATTTTTGCAAT?AAAAAGAAAGACA?T?C?AAATGGAGAAA??TAGT?GA?TTCAG    469
CPZGAB        ----------T--T-----------C-------------G-A-T-----------AT----A--C-----    692
CPZANT        ----------A--A-----------A-------------C-T-A-----------GC----T--T-----    698
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CONSENSUS-A   AGAACTCAATAA?AGAACTCA?GA?TTCTGGGA?GT?CA?TTAGGAAT?CC?CAT?C?GCGGG??TAAAA   694
U455          ------------A--------G--C--------A--T--A--------C--G---A-A-----TC-----   765
IBNG          ------------G--------A--T--------G--C--G--------A--T---C-C-----AT-----   768

CONSENSUS-B   aGAaCTtAAtAagAgaACtCAaGAcTTcTgGgAAGTtCAatTAGGaATACCACAtCCcgCaGGgtTAAAA   768
SF2           ------------A-------------------------G--------------C---------------   768
LAI           ------------------------------------------------------------------------   804
HXB2R         ------------------------------------------------------------------------   768
NL43          ------------------------T--------------------------------T------------   768
NY5CG         ------------------------T--------------------------------T------------   768
LW123         ------------------------------------------------------------------------   768
MN            --------------A-----------------------------------------T------------   777
JRCSF         -----------G------------------------------------------------------------   780
JRFL          --------------A---------------------------------------------------------   768
OYI           ---------------------G--------------C--------------------A------------   768
CAM1          ------------------------------------------------------------T------------   768
HAN           ------------A-----------T-----------------------------------------------   765
D31           ------------A-------------------------------------------------A------   768
RF            ---------------------------------------G-----------------T------------   765
YU2           ------------------------------------------------------------------------   768
BCSG3C        ---------------G-----------------------------------------------T--A------   768
P896          ------------------C--------------------------C-------------------------   768
RET7          --------------------------T-C-------------------------------------------   303
VE1RT         --------------------------T----------------------------------TG-----   303
VE2RT         G-----------------------------------------------------------------------   303
VE3RT         ------------------------------------------C----------------A------------   303
VE4RT         ---------C----A-----------------------------C-------------------------   303
VE5RT         G-----------------------------------------------------------------------   303
VE6RT         ------C-----------------------------------------------------------------   303
VE7RT         ------------------------------------------------------------------------   303
VE8RT         ------------A-----------------------------------------------------T------   303
HX330BC       ------------------------------------------------------------------------   303
HX660BC       ------------------------------------------------------------------------   303
HXBCRT        ------------------------------------------------------------------------   303
PD165BC       ---G-----------------------------------A----------------T--T---------   303
PD330BC       ------------------------------A--------------------------T------------   303
PD495BC       ------------------------------A--------------------------T------------   303
PD660BC       ------------------------------A--------------------------T------------   303
PDBCRT        ------------------------------------------------------------T------------   303
3202A12       ------------------------T---------------C-----------------------C-----   768
3202A21       ------------------------T---------------C-----------------------C-----   768
MANC          ------------------------------------------------------------------------   768
WEAU160       ------------------------------------------------------------TT-----------   768

CONSENSUS-D   aGAACTTAATAAGAGAACTCAAGATTTCTGGGAaGTTCAATTAGGAATACCGCATCCtGCAGGGCTgAAA   765
ELI           ------------------------------------------------------------------------   765
Z2Z6          G-----------------------------------------------------G--------A---   765
NDK           ----------------------------------G-----------------------------------   765

CONSENSUS-O   ?GAATTAAATAA?AGAACACAAGA?TTCTGGGAGGT?CA??TAGGTAT?CCACATCC?GGGGGTTT?AAG   678
ANT70         G-----------G-----------G-----------A--GC-------C--------G--------G---   756
MVP5180       A-----------A-----------T-----------G--AT-------T--------A--------A---   756

CONSENSUS-U   AGAGCTTAATAAAAGAACTCAAGATTTTTGGGAAGTTCAATTAGGAATACCACATCCTGCTGGGTTGAAA   765
MAL           ------------------------------------------------------------------------   765

CONSENSUS-CPZ AGAA?TAAATAA?AGAACACAAGA?TTTTGGGA??T?CA?TTAGG?AT?CCTCA?CCAGC?GG?TTAAA?   526
CPZGAB        ----C-------G-----------C--------AG-G--G-----C--A-----C-----A--G-----A   762
CPZANT        ----T-------A-----------T--------GA-A--A-----A--T-----T-----C--A-----G   768
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HIV1 POL

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CONSENSUS-A   AAGAAAAAATCAGTAACAGT?CTAGATGTGGGGGA?GCATATTTTTCAGTTCC?TTAGAT?AA??CTTTA   758
U455          --------------------A--------------C-----------------T------G--AG-----   835
IBNG          --------------------G--------------T-----------------C------A--GA-----   838

CONSENSUS-B   aAGAaaAAaTCAGTAACAGTacTgGAtGTgGGtGAtgcATAtTTtTCAGTtCCctTAgAT?AagacTTcA   837
SF2           ---------------------T------------------C------------------A-------T-   838
LAI           ------------------------------------------------------------G---------   874
HXB2R         ------------------------------------------------------------G---------   838
NL43          C------------------------------C---------------------------A---------   838
NY5CG         C------------------------------------------------------------A---------   838
LW123         ------------------------------------------------------------G---------   838
MN            ------------------------------------------------------------A---------   847
JRCSF         ------------------------------------------------------------A---------   850
JRFL          ----G-------------------------------------------------------A---------   838
OYI           ----------------------------------------C------------------A---------   838
CAM1          ------------------------------------------------------------A---------   838
HAN           --------------------C--------------------------------C-----A---------   835
D31           ------------------------------------------------------------G---------   838
RF            -----G---------------T--------------------------------------A----G----   835
YU2           ---------------------------------------------------------C--G---------   838
BCSG3C        -----------------------A------------CG------C---------------A---------   838
P896          ------------------------------------------------------------G---------   838
RET7          ---------------------------------------------C------------C--A---------   373
VE1RT         ------------------------------------------------------T------A---------   373
VE2RT         ---------------------T-------------------------------------A-G-------   373
VE3RT         ----------------------------T-------------------------------A---------   373
VE4RT         -----------------------T----------------------------------A---------   373
VE5RT         --------------------G-----------------------C---------------A----A----   373
VE6RT         ---------------------------------------------C---------------A----A----   373
VE7RT         --------G-----------------C-----------------------------------G---G-----   373
VE8RT         ----------------------A-----------------------------------G---------   373
HX330BC       ------------------------------------------------------------G---------   373
HX660BC       ------------------------------------------------------------G---------   373
HXBCRT        ----G-------------------------------------------------------G---------   373
PD165BC       ---------------------T-------A-----C------------------------G--AG-----   373
PD330BC       ---------------------T-------A-----C------------------------G--AG-----   373
PD495BC       ---------------------T-------A-----C------------------------G--AG-----   373
PD660BC       ---------------------T-------A-----C------------------------G--AG-----   373
PDBCRT        ---------------------T-------A-----C------------------------G--AG-----   373
3202A12       ------------------------------------------------------------A-G-------   838
3202A21       -------------G-----C-----------------------------------------A-G-------   838
MANC          ---------------------------------------------------------T--G---------   838
WEAU160       ------------------------------------------------------A----------G---------   838

CONSENSUS-D   AAGAAAAAATCAGTAACAGTACTGGATGTGGGTGATGCATATTTtTCAGTTCCCTTAGATgAAGAtTTTA   835
ELI           ------------------------------------------------------------------------   835
Z2Z6          ------------------------------------------------------------A----C----   835
NDK           ---------------------------------------------C------------------------   835

CONSENSUS-O   CAAA?GCAATCTGTTACAGTCTTAGATGTAGGAGATGCTTATTTCTCATG?CC?TTAGA?CCAGA?TTTA   743
ANT70         ----A-----------------------------------------------T--C-----C-----T----   826
MVP5180       ----G-----------------------------------------------C--T-----T-----C----   826

CONSENSUS-U   AAGAAAAAATCAGTCACAGTATTGGATGTGGGGGATGCATATTTTTCAGTCCCTTTAGATGAAGATTTCA   835
MAL           ------------------------------------------------------------------------   835

CONSENSUS-CPZ ?A?AA?AAATCAGTGACAGTATT?GATGT?GGAGATGCCTA?TTCTC????CCC?T?GAT?A?GA?TT?A   580
CPZGAB        A-G--A-----------------A-----A-----------C-----TTGT---C-G---A-A--T--C-   832
CPZANT        C-A--G-----------------G-----G-----------T-----CATA---T-A---C-G--C--T-   838
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CONSENSUS-A   GAAAGTATACTGC?TT?AC?ATACCTAGT?TAAA?AATGAGACACCAGG??T?AG?TA?CAGTACAATGT    818
U455          -------------G--C--C---------A----C--------------AG-C--G--T-----------    905
IBNG          -------------A--T--T---------G----T--------------GA-T--A--C-----------    908

CONSENSUS-B   GgAAgTAtACTGcATTTACCATACCTAGtataAACAATGAgaCACCagGgatTAGaTATCAgTACAATGT    907
SF2           -A------------------------------------------------------------------    908
LAI           ----------------------------------------------------------------------    944
HXB2R         ----------------------------------------------------------------------    908
NL43          ----------------------------------------------------------------------    908
NY5CG         ----------------------------------------------------------------------    908
LW123         ----------------------------------------------------------------------    908
MN            ----------------------------------------A-----------------------------    917
JRCSF         ----------------------------------------------------------------------    920
JRFL          ----A-----------------------------------------------------G--------------    908
OYI           -A------------------------------------------------------------------    908
CAM1          ------------------------------C---------------------------------------    908
HAN           -A--A-----------------------------------------------------------------    905
D31           -------C---------------------------------------------G-------------------    908
RF            ----------------------------------------A------C----------------------    905
YU2           ---------------------------------------------------C------------------    908
BCSG3C        ----A-----------------------------------------------------------------    908
P896          -------C---------------------------------------------------------A--------    908
RET7          ------------------------------C---------------------------------------    443
VE1RT         ----A------------------------G---------------------------------------    443
VE2RT         -A---------------------------G---------------------------------------    443
VE3RT         ----------------------------------------------------------------------    443
VE4RT         ---------------------------C-C---------------------------------------    443
VE5RT         ------------------------------------------------A--------------------    443
VE6RT         -----------------------------------------------G--------------------    443
VE7RT         ----------------------------------------------------------------------    443
VE8RT         -A-----C----------------------C---------------------------------------    443
HX330BC       ----A--------------------------T--------------------------------------    443
HX660BC       ----A--------------------------T--------------------------------------    443
HXBCRT        ----A-----------------------------------------------------------------    443
PD165BC       -A---------------------------------------------C--------G--------------    443
PD330BC       -A---------------------------------------------C--------G--------------    443
PD495BC       -A---------------------------------------------C--------G--------------    443
PD660BC       -A---------------------------------------------C--------G--------------    443
PDBCRT        -A---------------------------------------------C--------G--------------    443
3202A12       -A---------------------------G-------------------A--------------------    908
3202A21       -A---------------------------G-------------------A--------------------    908
MANC          ------------T----------------------------G-------AG-------------------    908
WEAU160       -------C--------------------------------A-----------------------------    908

CONSENSUS-D   GGAAATATACcGCaTTTACCATAcCTAGTATAAAcAATGAGACACCAGGGATTAGATATCAGTACAATGT    905
ELI           -------------C---------T-----------------------------------------------    905
Z2Z6          -----------T-----------------------T----------------------------------    905
NDK           ----------------------------------------------------------------------    905

CONSENSUS-O   GAAAATA?ACTGC?TTCACTATTCCTAGTGTGAA?AATGAGACCCCAGGA?TAAGATACCAGTACAATGT    809
ANT70         -------T-----T--------------------T---------------A-------------------    896
MVP5180       -------C-----C--------------------C---------------G-------------------    896

CONSENSUS-U   GGAAGTATACTGCATTCACTATACCCAGTATTAATAATGAGACACCAGGGATTAGATATCAGTACAATGT    905
MAL           ----------------------------------------------------------------------    905

CONSENSUS-CPZ G?AAATATAC?GC?TT?ACAATTCC?AG??T?AA?AATGAGACCCCAGGA?T?AGATAT???TATAATGT    636
CPZGAB        -G--------T--A--T--------C--TA-A--T---------------G-T------CAA--------    902
CPZANT        -A--------A--T--C--------A--CG-G--C---------------A-A------TGT--------    908
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HIV1 POL

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CONSENSUS-A   GCTTCC?CAGGGATGGAAAGG?TCACC??CAATATT?CAG???AGCATGACAAAAATCTTAGAGCCCTTT    880
U455          ------G--------------A-----AT-------C---AGT---------------------------    975
IBNG          ------A--------------G-----GG-------T---GCA---------------------------    978

CONSENSUS-B   gCTtCCaCAgGGaTGGAAAGGatCaCCAGCaATATtcCAaaGtAGcATGAcAAaAATcTTaGAgCCtTTT    977
SF2           ---G-----------------------------------------------------------------    978
LAI           -----------------------------------------------------------------------   1014
HXB2R         -----------------------------------------------------------------------    978
NL43          ----------------------------------------GT-----------------------------    978
NY5CG         ----------------------------------------GT-------------------G---------    978
LW123         -----------------------------------------------------------------------    978
MN            -----------------------------------------------------------------------    987
JRCSF         -----------------------------------------------------------------------    990
JRFL          ------G----------------------------------------------------------------    978
OYI           ------------------------------G--------------T------------------------    978
CAM1          -----------------------------------------------------------------------    978
HAN           -----------------------------------------------------------------------    975
D31           ---------A-------------------------------------------------------------    978
RF            ---------A--G--------------------------------T------------------------    975
YU2           ---------------------G------------------------------C----------------    978
BCSG3C        ---C------------------------------------------------------------------    978
P896          -----------------------------------------------------------------------    978
RET7          ------------------------------------------C-------T---------------C---    513
VE1RT         ------------------------------G----------------------------------------    513
VE2RT         ---------A-----------T------------------T-----------------------------    513
VE3RT         -----------------------------------------------------------------------    513
VE4RT         -----------------------------------------------------------------------    513
VE5RT         ---G--------------------------------T---T-----------------------------    513
VE6RT         ---------A-------------------------C----T-----------------------------    513
VE7RT         ---------------------G-----------------------------------------------    513
VE8RT         A----------------------------------------------------------------------    513
HX330BC       ----------------------G----------------------------------------------    513
HX660BC       ----------------------G----------------------------------------------    513
HXBCRT        -----------------------------------------------------------------------    513
PD165BC       -----------------------------------------------------------------------    513
PD330BC       -----------------------------------------------------------------------    513
PD495BC       -----------------------------------------------------------------------    513
PD660BC       -----------------------------------------------------------------------    513
PDBCRT        -----------------------------------------------------------------------    513
3202A12       ---------A------------------------------T----T------------------------    978
3202A21       ---------A------------------------------T-----------------------------    978
MANC          ------------------------G--------------------------------------A------    978
WEAU160       ------------------------------------------------------------A------------    978

CONSENSUS-D   GCTtCCACAGGGATGGAAAGGATCACCGGCAATATTCCAAAGTAGCATGACAAAAATCTTAGAGCCCTTT    975
ELI           -----------------------------------------------------------------------    975
Z2Z6          -----------------------------------------------------------------------    975
NDK           ---C------------------------------------------------------------------    975

CONSENSUS-O   CCTCCCGCAAGG?TGGAAAGGTTCACCAGC?ATATT?CA?AGTTCAATGACAAA?ATTCTAGATCCATT?    873
ANT70         ------------A-----------------T-----C--A--------------A--------------C    966
MVP5180       ------------G-----------------C-----T--G--------------G--------------T    966

CONSENSUS-U   GCTACCACAGGGATGGAAAGGATCACCAGCAATATTCCAGAGTAGCATGACAAAAATCTTAGAACCCTTT    975
MAL           -----------------------------------------------------------------------    975

CONSENSUS-CPZ T?T?CCACAAGG?TGGAAAGG?TC?CCA?CTAT?TT?CAA???AG?ATGAC?AA?AT??TAG?ACC?TT?    687
CPZGAB        -T-G--------A--------G--T---T----C--C---AGC--T-----A--A--TC---A---C--C    972
CPZANT        -C-A--------C--------A--A---G----T--T---GCA--C-----C--G--CT---C---A--T    978
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CONSENSUS-A   AGA?CA?AA?ATCCAGA?ATAGT?ATCTA?CAATACATGGATGA?TT?TATGT?GGATCTGATTTAGAAA    941
U455          ---T--C--C-------C-----T-----T--------------C--G-----G----------------   1045
IBNG          ---A--A--A-------G-----G-----C--------------T--A-----A----------------   1048

CONSENSUS-B   AgaAAaCAaAAtCCAGacaTagttATcTAtCAaTAcATGGATGAttTGTAtGTAGGATCTGAcTTAGAaA   1047
SF2           --------G-------------------------------------------------------------   1048
LAI           ----------------------------------------------------------------------   1084
HXB2R         ----------------------------------------------------------------------   1048
NL43          -----------------------C----------------------------------------------   1048
NY5CG         -----------------------C----------------------------------------------   1048
LW123         ----------------------------------------------------------------------   1048
MN            ----------------------------------------------------------------------   1057
JRCSF         ---------------------A------------------------------------------------   1060
JRFL          ---------------------A------------------------------------------------G-   1048
OYI           ----------------------------------------------------------------------   1048
CAM1          ----------------------------------------------------------------------   1048
HAN           ----------------------------------------------------------------------   1045
D31           ----------------------------------------------------------------------   1048
RF            -A---------------A---------------------------------------------T-------   1045
YU2           ------------------C-------------G-----------------C--------------------   1048
BCSG3C        -----G--------------------------G-------------------------------------   1048
P896          ------------------------------------------C--------------------------   1048
RET7          -----------------A-----------------T---------------------------------    583
VE1RT         -----------------T--------------G-------------------------------------    583
VE2RT         --G-----------------------A----------------------------------T-------    583
VE3RT         ------------------------------C---------------------------------------    583
VE4RT         ----------------------------------------------------------------------    583
VE5RT         ----------------G-----------------------------------------------------    583
VE6RT         -----------C----------A----------------------------------------------    583
VE7RT         ----------------------------------------------------------------------    583
VE8RT         ----------------G-----------------------------------------------------    583
HX330BC       -A--------------------------------------------------------------------    583
HX660BC       -A--------------------------------------------------------------------    583
HXBCRT        ----------------------------------------------------------------------    583
PD165BC       ---------------------------------------------C------------------------    583
PD330BC       ---------------------------------------------C------------------------    583
PD495BC       ----------------------G----------------------C------------------------    583
PD660BC       ----------------------G----------------------C------------------------    583
PDBCRT        ---------------------------------------------C------------------------    583
3202A12       -----------------------------------T----------------------------------   1048
3202A21       -----------------------------------T----------------------------------   1048
MANC          ------------------G-G-------------------------------------------------   1048
WEAU160       ----------------------------------------------------------------------   1048

CONSENSUS-D   AGAAAACAAAATCCAGAAATaGTTATCTATCAATACATGGATGATTTGTATGTAGGATCTGACTTAGAAA   1045
ELI           --------------------G-------------------------------------------------   1045
Z2Z6          ----------------------------------------------------------------------   1045
NDK           ----------------------------------------------------------------------   1045

CONSENSUS-O   AG?A?A??CAACCCAGAA?TAGAAATTT?TCAGTACAT?GATGAC?TATATGTAGGATCAGATTTACC??    933
ANT70         --G-G-GA----------T---------G---------G------C----------------------CC   1036
MVP5180       --A-A-AG----------G---------A---------A------T----------------------AT   1036

CONSENSUS-U   AGAACAAAAAATCCAGAAATAGTCATATACCAATACATGGATGATTTGTATGTAGGGTCTGATTTAGAAA   1045
MAL           ----------------------------------------------------------------------   1045

CONSENSUS-CPZ AG?GA?AAG?ATCC?G???T????ATTTA?CA?TACATGGATGA?CT?TATGT?GG?TCTGAT?T?GAAA    738
CPZGAB        --A--A---A----T-ACA-TACT-----C--G-----------C--A-----G--G------C-T----   1042
CPZANT        --G--T---T----A-CAG-AGAA-----T--A-----------T--C-----A--A------A-G----   1048
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HIV1 POL

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CONSENSUS-A   TAGGGCA?CATAGAGCAAAAATAGAGGA?TT?AGAG??CATCTA?TGA??TGGGGATT?A??AC?CCAGA    999
U455          -------A--------------------A--A----CT------T---GC--------C-TT--C-----   1115
IBNG          -------G--------------------G--G----GA------C---AA--------T-CC--A-----   1118

CONSENSUS-B   TAGggCAGCAtAGAacAAAAATAGAGGAacTGAGacaacATcTgtTgAggtGGGGatTtaccACaCCaGA   1117
SF2           ------------------------------------G-----------------------------------   1118
LAI           ----------------------------G---------------------------C-------------   1154
HXB2R         ----------------------------G---------------------------C-------------   1118
NL43          ------------------------------------------------------------------------   1118
NY5CG         ------------------------------------------------------------------------   1118
LW123         ----------------------------G---------------------------C-------------   1118
MN            --------------G---------------------G---------------------------------   1127
JRCSF         ------------------------------------------------A---------------------   1130
JRFL          --------------G--------------T-------------------------G--------------   1118
OYI           ------------------------------------------------------------------------   1118
CAM1          ----------------------------------------------------------C-------------   1118
HAN           ---A----------------------------------G----------A---------------------   1115
D31           ------------------------------------------------------------G-----T--------   1118
RF            ---------------T-------------------G----------A-A------G-----------G--   1115
YU2           ------------------------------------------------------------------------   1118
BCSG3C        ------------------------------------------------A-----------------------   1118
P896          --------------G-------------T-------------------A------G--------------   1118
RET7          --------------G---------------------------------A---------------------   653
VE1RT         ---A----------------------------------G-----------AG-------C-----------   653
VE2RT         ------------------------------------------------A----------TA---C-----   653
VE3RT         ------------------------------------GG----T------A-------C-------------   653
VE4RT         ------------------------------------------------------------------C-----   653
VE5RT         ----A------------------------------G----------------------C-----------   653
VE6RT         ---------------------------------------------C-T-A---------------------   653
VE7RT         ----------------------------------------A----A---------C-----------   653
VE8RT         ----A-----C-----------------------G----------------------C-----------   653
HX330BC       ----------------------------G-------------------------------------------   653
HX660BC       ----------------------------G-------------------------------------------   653
HXBCRT        ----------------------------G---------------------------C-------------   653
PD165BC       ----------------------------------G-------------A---------------------   653
PD330BC       ----------------------------------G-------------A---------------------   653
PD495BC       ----------------------------------G-------------A---------------------   653
PD660BC       ----------------------------------G-------------A---------------------   653
PDBCRT        ----------------------------------G-------------A---------------------   653
3202A12       ------------------------------------------------------------------------   1118
3202A21       ------------------------------------------------------------------------   1118
MANC          -------------------------------------GT---------A---------------------   1118
WEAU160       ----------------------------G-------------------------------------------   1118

CONSENSUS-D   TAGGGCAGCATAGaACAAAAATAGAGgAATTAAGAGAACATCTATTgAGGTGGGGATTTACCAcACCAGA   1115
ELI           -------------G------------A-----------------------------------G------   1115
Z2Z6          ------------------------------------------------A----------------------   1115
NDK           ------------------------------------------------------------------------   1115

CONSENSUS-O   TG?CAGAACATAGAAA?AGG?T?GAATTGCTTAG?GAACA??TATATCAGTGGGGATT?ACTACCCCTGA    995
ANT70         --A-------------A---A-T-----------A-----CC----------------C-----------   1106
MVP5180       --G-------------G---G-C-----------G-----TT----------------T-----------   1106

CONSENSUS-U   TAGGACAACATAGAACAAAAATAGAGGAACTAAGAGAACATCTATTGAAATGGGGATTTACCACACCAGA   1115
MAL           ------------------------------------------------------------------------   1115

CONSENSUS-CPZ TT??T??ACATAGA?AAA?G?T?GAA?A?CT?AGACAACATTT?C?????TGGGG??T????AC?CC?GA    783
CPZGAB        --GA-CA-------A---A-G-G---G-A--A-----------G-TTAAA-----GT-CACA--C--A--   1112
CPZANT        --AC-GC-------G---T-A-A---A-G--T-----------A-AGGTC-----AC-AGAG--T--T--   1118
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CONSENSUS-A   CAAAAAGCATCAGAAAGAACCTCCATTTCTTTGGATGGG?TATGAACT?CATCCTGA?AAATGGACAGT?   1065
U455          ----------------------------------------G--------T--------C-----------T   1185
IBNG          ----------------------------------------T--------C--------T-----------C   1188

CONSENSUS-B   cAAaAAaCATCAgAAaGAaCCTCCATTcCTTTGGATGGGTTATGAACTcCATCCTGAtAAATGGACAGTa   1187
SF2           ----------------------------------------------------------------------   1188
LAI           ----------------------------------------------------------------------   1224
HXB2R         ----------------------------------------------------------------------   1188
NL43          ----------------------------------------------------------------------   1188
NY5CG         ----------------------------------------------------------------------   1188
LW123         ----------------------------------------------------------------------   1188
MN            ----------------------------------------------------------------------   1197
JRCSF         ----------------------------------------------------------------------   1200
JRFL          ------------------------------------------------------------C---------   1188
OYI           ----------------------------------------------------------------------   1188
CAM1          ----------------------------------------------------------------------   1188
HAN           ----------------------------------------------------------------------   1185
D31           ----------------------------------------------------------------------   1188
RF            ---G-----------------------T-----------------------------------------   1185
YU2           ----------------------------------------------------------------------   1188
BCSG3C        ----------------------------------------------------------------------   1188
P896          ---------------------------T------------------------------------------   1188
RET7          ---------------------------T------------------------------------------    723
VE1RT         ----------------------------------------------------------------------    723
VE2RT         ----------------------------------------------------------------------    723
VE3RT         T---------------------------------------------------------------------    723
VE4RT         ----------------------------------------------------------------------    723
VE5RT         ------G---------------------------------------------------------------    723
VE6RT         ---------------G-----------T-------------------------------------------G    723
VE7RT         ----------------------------------------------------------------------    723
VE8RT         ------G---------------------------------------------------------------    723
HX330BC       ----------------------------------------------------------------------    723
HX660BC       ----------------------------------------------------------------------    723
HXBCRT        ----------------------------------------------------------------------    723
PD165BC       ----------------------------------------------------------------------    723
PD330BC       ----------------------------------------------------------------------    723
PD495BC       ----------------------------------------------------------------------    723
PD660BC       ----------------------------------------------------------------------    723
PDBCRT        ----------------------------------------------------------------------    723
3202A12       ----------------------------------------------------------------------   1188
3202A21       ----------------------------------------------------------------------   1188
MANC          ------------------------------------------------A---------------------   1188
WEAU160       ------------A-----C-------------------------------------------------   1188

CONSENSUS-D   TAAAAAACATCAGAAAGAACCcCCATTTCTTTGGATGGGtTATGAACTCCATCCTGATAAATGGACAGTA   1185
ELI           ----------------------------------------------------------------------   1185
Z2Z6          ----------------------------------------G-----------------------------   1185
NDK           ---------------------T------------------------------------------------   1185

CONSENSUS-O   ?AAAAAGCATCA?AAGGAACCTCCCTTT?TATGGATGGG?TATGAGCTCCA?CCAGACAA?TGGACAGTA   1059
ANT70         C-----------A---------------C----------G-----------T--------A---------   1176
MVP5180       T-----------G---------------T----------A-----------C--------G---------   1176

CONSENSUS-U   CAAAAAGCATCAGAAAGAACCCCCATTTCTTTGGATGGGGTATGAACTCCACCCTGACAAATGGACAGTG   1185
MAL           ----------------------------------------------------------------------   1185

CONSENSUS-CPZ CAAAAA?CATCA?AA?GA?CC?CC?TTT??ATGGATGGGATATGAG?T?CA?CCAGACAAATGGAC?GT?    840
CPZGAB        ------A-----A--G--G--A--C---TT----------------C-C--C--------------A--C   1182
CPZANT        ------G-----G--A--A--T--A---CA----------------T-A--T--------------T--A   1188
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CONSENSUS-A   CAGCCT?TA?A?CT?CCAGAAAAAGACAGCTGGACTGTCAATGATATACAGAAATTAGT?GGAAAACTAA   1130
U455          ------A--C-G--G--------------------------------------------A----------   1255
IBNG          ------G--G-A--A--------------------------------------------G----------   1258

CONSENSUS-B   CAgCCTATAgtgCTgCCAGAAaAaGAcAGcTGGACTGTCAATGAcATACAgAAgTTAGTGGGaAAATTgA   1257
SF2           ---------A------------------------------------------------------------   1258
LAI           ------------------------------------------------------------------------   1294
HXB2R         ------------------------------------------------------------G-------   1258
NL43          -----------------------G-----------------------------A----------------   1258
NY5CG         -----------------------G-----------------------------A----------------   1258
LW123         ------------------------------------------------------------G-------   1258
MN            --------------A---------------------------------------------------------   1267
JRCSF         ------------------------------------------------------------------------   1270
JRFL          ------------------------------------------------------------------------A-   1258
OYI           ---------A------------------------------------------------------------A-   1258
CAM1          --A------A-------------G----------------------------------------------   1258
HAN           ------------------------------------------------------------------------   1255
D31           ---------AC-----------------------------------------------------------   1258
RF            ------------------------------------------------------------------------   1255
YU2           --------------------------T---------------------------------------------   1258
BCSG3C        ------------------------------------------------------------------------   1258
P896          ------------------------------------------T-----------------G-------   1258
RET7          --------------A---------------------------------------------------------A-   793
VE1RT         ---------A----------------A-------------------------------------------A-   793
VE2RT         ------------------------------------------------------------------------   793
VE3RT         ------------------------------------------------------C-----------------A-   793
VE4RT         --------------------------A---------------------------------------------A-   793
VE5RT         ---------A-A-----------G-----------------------------------------------   793
VE6RT         ----------------------G-----------------------------------------------   793
VE7RT         ------------------------------------------------------------------------   793
VE8RT         ----------A---------------T-------------------------------------------   793
HX330BC       ------------------------------------------------------------G-------   793
HX660BC       ------------------------------G-------------------------------G-------   793
HXBCRT        ------------------------------------------------------------G-------   793
PD165BC       ---------A----------------T-------------------------------------------   793
PD330BC       ---------A----------------T-------------------------------------------   793
PD495BC       ---------A----------------T-------------------------------------------   793
PD660BC       ---------A----------------T-------------------------------------------   793
PDBCRT        ---------A----------------T-------------------------------------------   793
3202A12       ---------A--T---------------------------------------------------------   1258
3202A21       ---------------------------------------------T-------------------------   1258
MANC          ---------ACA----------------------------------------------------------A-   1258
WEAU160       ---------AA---------------A--T----------------------------------------   1258

CONSENSUS-D   CAGtCTATAAAacTGCCAGAAAAgGAgAGCTGGACTGTCAATGATATACAGAAgTTAGTGGgGAaATTAA   1255
ELI           ------------------------------------------------------C-------A--G-----   1255
Z2Z6          ------------T-----------------------------------------------------------   1255
NDK           ---C-------C-----------A--A--------------------------------------------   1255

CONSENSUS-O   CAG?CCATCCAATTGCCT?ACAA?GA?GTGTGGACAGTAAATGATATACAAAAA?TA?TAGGAAA??TAA   1121
ANT70         ---T--------------A----G--T---------------------------C--A-------GC---   1246
MVP5180       ---C--------------G----A--A---------------------------T--G-------AT---   1246

CONSENSUS-U   CAGCCTATACAACTGCCAGACAAGGAAAGCTGGACTGTCAATGATATACAGAAATTGGTGGGAAAACTAA   1255
MAL           ------------------------------------------------------------------------   1255

CONSENSUS-CPZ CAG???AT??A??TACCAGA???AGA?G??TGGAC?GT?AATGA?AT?CA?AAACT??TAGGAAA?TTAA    889
CPZGAB        ---CCT--TC-AT-------AAA---G-TA-----T--C-----T--A--A-----GA-------G----   1252
CPZANT        ---AAA--AA-GC-------GCC---T-AT-----A--T-----C--C--G-----AG-------A----   1258
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CONSENSUS-A   ATTGGGCAAGTCAGATTTATGCAGG?ATTAAA?TAAAGCAACTGTGTA?ACT?CTCAGGGGAGCCAAAGC   1196
U455          -------------------------G------G---------------A---T-----------------   1325
IBNG          -------------------------A------A---------------G---C-----------------   1328

CONSENSUS-B   ATTGGGCAAGtCAgATtTAtgCAGGGATtAaAGTaAagcAatTATGTAaaCTcCTTaGgGgaacCAAAGC   1327
SF2           ------------------------------------G-----------------A-----------   1328
LAI           -------------------CC---------------G---------------------A-----------   1364
HXB2R         -------------------CC---------------G---------------------A-----------   1328
NL43          -------------------------------------G---------------T-----------------   1328
NY5CG         -------------------------------------G---------------T----------T------   1328
LW123         -------------------CC---------------G---------------------A-----------   1328
MN            -------------------C-------------------------------------A-----------   1337
JRCSF         -------------A-----------------------------------------------------   1340
JRFL          -------------------C-----------------------------------------------   1328
OYI           ---------------------------------------A-C-----------------------------   1328
CAM1          ----------------C-----------------------------------------------------   1328
HAN           -------------------------------------------------G--A---------C-------   1325
D31           -------------------------------------G-------------------------G-------   1328
RF            ------------------------------------------------------------------------   1325
YU2           -------------------------------------G--------------------------------   1328
BCSG3C        -------------------CT-------C-----G-----G-----------------------------   1328
P896          ------------------------------------------------------------------------   1328
RET7          ------------------------------------------------------------------C-------   863
VE1RT         -------------------C--------C---------------------------------------   863
VE2RT         ------------------------------------------------------------------------   863
VE3RT         ----------C--------CC-----------------------------G----------------------   863
VE4RT         -------------------CC----------------A------------------------------   863
VE5RT         ----------------C---C-----------------------------------------G-------   863
VE6RT         --------------------C----------------A------------------T---C-G-------   863
VE7RT         --------------------C---------------------------------------------   863
VE8RT         -------------------------------------G--------------------------------   863
HX330BC       -------------------CC---------------G---------------------A-----------   863
HX660BC       -------------------CC---------------G---------------------A-----------   863
HXBCRT        -------------------CC---------G-----G---------------------A-----------   863
PD165BC       ---------------------------------------A------------------------------   863
PD330BC       ---------------------------------------A------------------------------   863
PD495BC       ---------------------------------------A------------------------------   863
PD660BC       ---------------------------------------A------------------------------   863
PDBCRT        ---------------------------------------A------------------------------   863
3202A12       -------------------------------------G---G-----------------------------   1328
3202A21       -------------------C----------------G---C-----------------------------   1328
MANC          --------------------C-----------------------------------------G-------   1328
WEAU160       -------------------C---------------------C-------------------G--------   1328

CONSENSUS-D   ACTGGGCAAGCCAGATTTATcCAGGAATTAAAGTAAggCAATTaTGTAAACTCCTTAGGGGAACCAAAGC   1325
ELI           ---------------------------------------A------------------------------   1325
Z2Z6          ---------------------------------------------G--------------------------   1325
NDK           --------------------G---------------A--------------------------------   1325

CONSENSUS-O   ATTGGGCAAGTCAAATCTATCAAGGAATTAGAGT?A?AGAATTGTG?AAGTTAAT?AGAGG?ACCAA?TC   1185
ANT70         ----------------------------------G-G---------T--------T-----C-----G--   1316
MVP5180       ----------------------------------A-A---------C--------C-----A-----A--   1316

CONSENSUS-U   ATTGGGCAAGTCAGATTTATCCAGGAATTAAAGTAAAGCAATTATGTAAACTCCTTAGGGGAGCAAAAGC   1325
MAL           ------------------------------------------------------------------------   1325

CONSENSUS-CPZ ATTGGGCAAGTCAGAT?TA?CCAGGAAT?AAAA??AAGCA?TT?TGTA??CT?AT?AGAGGA???AAGA?    944
CPZGAB        ----------------T--T--------A----TA-----A--A----AG--G--A------ACA----A   1322
CPZANT        ----------------C--C--------C----CT-----G--G----GA--C--C------GTC----G   1328
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CONSENSUS-A   ACTAACAGATATAGTA?C?CTGACTGA?GAAGCAGAATTAGAATTGGCAGAGAACAGGGA?ATT......   1256
U455          ----------------A-C--------A--------------------------------G---......   1389
IBNG          ----------------G-A--------G--------------------------------A---......   1392

CONSENSUS-B   AcTaACAGAAgTaaTAccacTaACAgAAGAAGCAGAgcTAGAacTgGCAGAAAAcAGgGAgATT......   1391
SF2           ------------------------------------------------------------------.....   1392
LAI           ----------------------------------------------------------A------.....   1428
HXB2R         ----------------------------------------------------------A------.....   1392
NL43          -------------G----------------------------------------------------.....   1392
NY5CG         -------------G----------------------------------------------------.....   1392
LW123         -------------------T----------------------------------------A------.....   1392
MN            ------------------------------------------------------------A---.....   1401
JRCSF         ---T---------------------A-----------------------------------------.....   1404
JRFL          ------------------------------------------------------------------.....   1392
OYI           ------------------------------------------------------------------.....   1392
CAM1          -------------G----------------------A--------------------A------.....   1392
HAN           -------------------------A-------------------A------------------.....   1389
D31           -------------------------A----------------------------------------.....   1392
RF            -------------G---A-------A---------------------------T----------.....   1389
YU2           -----------------------------------A-----------------------A---.....   1392
BCSG3C        -------------G--A-----------------------------------------A---.....   1392
P896          -------------G----------------------------------------------------.....   1392
RET7          -------------G-----------A---------------------------------A---.....    927
VE1RT         ---------------------------------------------A-----------A------.....    927
VE2RT         ------------G---------------------------------------------A---.....    927
VE3RT         ----------------G--------A----------A----------------------------.....    927
VE4RT         ------------G---T-T-----------------------------------------------.....    927
VE5RT         ------------G------------------------T---------------------------.....    927
VE6RT         -------------G-------T--------------A--------A------------------.....    927
VE7RT         ------------------------------------------T---------------------.....    927
VE8RT         ------------------------------------------G---------------------.....    927
HX330BC       ------------------------------------------------------------A------.....    927
HX660BC       ------------------------------------------------------------A------.....    927
HXBCRT        ------------------------------------------------------------A------.....    927
PD165BC       -T----------------------------------------------------------------.....    927
PD330BC       -T----------------------------------------------------------------.....    927
PD495BC       -T----------------------------------------------------------------.....    927
PD660BC       -T----------------------------------------------------------------.....    927
PDBCRT        -T----------------------------------------------------------------.....    927
3202A12       ------------------------------------------------------------------.....   1392
3202A21       ------------------------------------------------------------------A---.....   1392
MANC          -T-----------------------A-----------------T---------------------.....   1392
WEAU160       ----------A--------A----------------------G-----------------A---.....   1392

CONSENSUS-D   ACTAACAGAAGTAaTACCACTAACAGAAGAAGCAGAATTAGAACTGGCAGAAAACAGGGAAATT......   1389
ELI           ------------------------------------------------------------------.....   1389
Z2Z6          ------------------------------------------------------------------.....   1389
NDK           -------------G----------------------------------------------------.....   1389

CONSENSUS-O   ATT?ACAGA?GTAGTACCTTTAAGTA?AGAGGCAGA?CT?GAATTAGA?GAAAACAGAGAAA?G......   1242
ANT70         ---A-----A----------------G---------G--G--------G-------------G-.....   1380
MVP5180       ---G-----G----------------A---------A--A--------A-------------A-.....   1380

CONSENSUS-U   ACTAACAGACATAGTACCATTAACTGCAGAGGCAGAATTAGAATTGGCAGAGAACAGGGAAATT......   1389
MAL           ------------------------------------------------------------------.....   1389

CONSENSUS-CPZ ?CT?ACAGAT??AGT?C???T?AC????GAAGCAGAATTAGAATTAG?AGAAAATA???A?AT???????    989
CPZGAB        A--G------GT---T-CTC-C--ACCA-------------------C--------GGG-G--A......   1386
CPZANT        T--A------AG---A-AAA-G--TAGG-------------------A--------AAC-A--TNNNNNN   1398
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CONSENSUS-A   ...CTAAAAGA?CCTGT?CATGG?GTATATTATGACCCA?CAAAAGAC?TAGTAGCAGAA?TACAGAAAC   1317
U455          ...--------C-----G-----A---------------T--------C-----------A---------   1456
IBNG          ...--------A-----A-----G---------------A--------T-----------T---------   1459

CONSENSUS-B   ...cTAAAAGaaCCaGTaCATGgAGTgTAtTaTGACCCAtCAAAAGACTTaatAGcAGAaaTaCAgAAgC   1458
SF2           ...-------------------A---A------------------------G------------------   1459
LAI           ...------------------------------------------------------------------   1495
HXB2R         ...------------------------------------------------------------------   1459
NL43          ...-----------G------------------------------------------------------   1459
NY5CG         ...-----------G------------------------------------------------------   1459
LW123         ...------------------------------------------------------------------   1459
MN            ...-------------------------------------------------------G---------   1468
JRCSF         ...-----------------------------------------------------T--------------   1471
JRFL          ...--------G---------------------------------------------C---------   1459
OYI           ...-----------------------------------------------G--------T-------A-   1459
CAM1          ...-------------------------------------------------------C-------A-   1459
HAN           ...----------------------------G------------------G------------------   1456
D31           ...------------------------------------------------------------------   1459
RF            ...------------------------------------------------------------------   1456
YU2           ...-----------------------------------------------G------------------   1459
BCSG3C        ...------------------------------------------------------------------A-   1459
P896          ...-------------------------------------A-------------------GC---------   1459
RET7          ...------------------------------------------------------------------A-    994
VE1RT         ...--------------G-----------------------------------------------------    994
VE2RT         ...T----------------------------------A-------------------G-----A----    994
VE3RT         ...------------------------------------------------------------------    994
VE4RT         ...------------------------------------------------------------------    994
VE5RT         ...------------------------------------------------------------------    994
VE6RT         ...-------------------------------------------------------G----A--A-    994
VE7RT         ...---------------------------C---------A------------------------------    994
VE8RT         ...---------------------------C---------A-----------G----------------A-    994
HX330BC       ...--------------G-----------------------------------------------------    994
HX660BC       ...--------------G-----------------------------------------------------    994
HXBCRT        ...------------------------------------------------------------------    994
PD165BC       ...-----------------------------------------------G--------C-------A-    994
PD330BC       ...-----------------------------------------------G--------C-------A-    994
PD495BC       ...-----------------------------------------------G--------C-------A-    994
PD660BC       ...-----------------------------------------------G--------C-------A-    994
PDBCRT        ...-----------------------------------------------G--------C-G-----A-    994
3202A12       ...----------------------CA------------------------G------------------   1459
3202A21       ...-----------------C--------------------------A----------------------   1459
MANC          ...-------T---------------------------------------C-----------------   1459
WEAU160       ...-----------G-----------------------------------------------GC---------   1459

CONSENSUS-D   ...cTAAAAGAACCAGTACATGGAGTGTATTATGACCCATCAAAAGACTTAATAGCAGAAaTACAGAAAC   1456
ELI           ...T-----------------------------------------------------------------   1456
Z2Z6          ...------------------------------------------------------------------   1456
NDK           ...-------------------------------------------------------------C---------   1456

CONSENSUS-O   ...?TAAAA?A?CCAGT?CATGG?GTATA?TA?CA?CCTGA?AA?GA??T?TGGGTTA?TATTCAGAAGC   1295
ANT70         ...T-----C-A-----G-----G-----C--T--A-----T--G--TC-A-------A-----------   1447
MVP5180       ...C-----G-G-----A-----A-----T--C--G-----C--A--CT-G-------G-----------   1447

CONSENSUS-U   ...CTAAAAGAACCAGTGCATGGGGTATATTATGACCCATCAAAAGACTTAATAGCAGAAATACAGAAGC   1456
MAL           ...------------------------------------------------------------------   1456

CONSENSUS-CPZ ????TA????????A?TA?A?GG????TACTAT?A?CC?G????A???CT?A?AGCA???ATACAGAAAC   1025
CPZGAB        ...G--AGCACACC-G--C-T--GGTA------G-T--A-ACAA-GAG--T-T----GAA----------   1453
CPZANT       NNNC--CAGCAGAA-A--G-G--ATAC------C-G--T-GTCT-CCA--A-A----ACC----------   1468
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HIV1 POL

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CONSENSUS-A   AAGGGCAAGACCAATGGACATATCAAATTTATCAAGAGCCATTTAAAAAT?T?AAAACAGGAAAATATGC   1385
U455          ---------------------------------------------------C-G-----------------   1526
IBNG          ---------------------------------------------------T-A-----------------   1529

CONSENSUS-B   AgGGgcAaGgCCAATGGACATAtCAaATtTaTCAaGAgCCATtTAaaAatcTgAaAACAGgaAAaTATgC   1528
SF2           ------------------------------------------------------------------G-----   1529
LAI           ------------------------------------------------------------------------   1565
HXB2R         ------------------------------------------------------------------------   1529
NL43          ------------------------------------------------------------------------   1529
NY5CG         ------------------------------------------------------------------G-----   1529
LW123         ------------------------------------------------------------------------   1529
MN            ---------------------------------------------------------------C--------   1538
JRCSF         ------------------------------T-----------------------------------------   1541
JRFL          ---------------------------------------------------T----------------------   1529
OYI           ----A-------------------------------------------------------------G-----   1529
CAM1          ------------------------------------------------------------------G-----   1529
HAN           -----G-------------------------------A--------G-----------------G-----   1526
D31           ------------------------------------------------------------------G-----   1529
RF            ----------------------C--------------------------C--------------G-----   1526
YU2           ------------------------------------------------------------------------   1529
BCSG3C        ---------------------------------------------------------------C---------   1529
P896          -------G--------------------------G-------A---------------------------   1529
RET7          ------------------------------------A-------------------------------   1064
VE1RT         -----G-C--------------------------G-----------G-----------------------   1064
VE2RT         ------------------------------------------------------------------------   1064
VE3RT         -------------------------G--A-----------------------------------------   1064
VE4RT         ------------------------------------------------------------------------   1064
VE5RT         ---------A------------------------G--------------C--------------------   1064
VE6RT         -----G-----------------------------------------------T-A-----------G---A-   1064
VE7RT         ------------------------------------------------------------------------   1064
VE8RT         -A-----C----------------------------------------------------------G-----   1064
HX330BC       ------------------------------------------------------------------------   1064
HX660BC       ------------------------------------------------------------------------   1064
HXBCRT        ---------------------------------------------------------G----------------   1064
PD165BC       ------------------------------------------------------------------G-----   1064
PD330BC       ------------------------------------------------------------------G-----   1064
PD495BC       ------------------------------------------------------------------G-----   1064
PD660BC       ------------------------------------------------------------------G-----   1064
PDBCRT        ------------------------------------------------------------------G-----   1064
3202A12       ------------------------------------------------------------------------   1529
3202A21       ----------------------------C-------------------------------------------   1529
MANC          ---------------------------------------------G--G---------------G-----   1529
WEAU160       -------------------------G----------------------------------------G-----   1529

CONSENSUS-D   AAGGGcACGGCCAATGGACATACCAAATTTATCAAGAACCATTTAAAAATCTgAAAACAGGAAAGTATGC   1526
ELI           ------------------------------------------------------------------------   1526
Z2Z6          ------------------------------------------------------------------------   1526
NDK           -----G----------------------------------------------A-----------------   1526

CONSENSUS-O   A?GGAG??G?GCAATGGACTTACCAG?TATATCAGGA?GAACATAAGAACCT?AAAACAGG?AAATAT?C   1356
ANT70         -A----GG-A----------------A----------A--------------C--------G------A-   1517
MVP5180       -T----AA-G----------------G----------T--------------T--------A------G-   1517

CONSENSUS-U   AGGGGCAAGGTCAATGGACATATCAAATATACCAAGAGCAATATAAAAATCTGAAAACAGGGAAGTATGC   1526
MAL           ------------------------------------------------------------------------   1526

CONSENSUS-CPZ A?GG?????G?CA?TGGAC?TATCA?ATAT?TCA??A???A???AA????TT?AA??CAGG?AAATATGC   1068
CPZGAB        -G--CAACT-C--G-----T-----G----T---GG-ACC-CAT--GAAT--G--GA----G--------   1523
CPZANT        -A--GTCAG-A--A-----C-----A----A---AA-TGA-GGA--ACTG--A--AG----A--------   1538
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CONSENSUS-A   AA?AAA?AGGTCTGC?CACACTAATGATGTAAA?CAATTAACAGA?GT?GTGCAAAAAGT??C?A??GAA   1444
U455          --G---A--------T-----------------A-----------A--G-----------GT-C-CA---   1596
IBNG          --A---G--------C-----------------G-----------G--A-----------AG-T-TG---   1599

CONSENSUS-B   aAgaatgAggGGtgcCCACACTAATGATgTaAaACAaTTAacAGAGGCAGTgCAaAAaaTagCCacaGAA   1598
SF2           ---G-------------------------------G---------------------G--T---------   1599
LAI           -----C-------------------------------------------------------A--------   1635
HXB2R         ------------------------------------------------------------A--------   1599
NL43          --------A---------------------G--------------------A------------------   1599
NY5CG         --------A---------------------G--------------------A------------------   1599
LW123         -------------A-----------------------------------------------A----C---   1599
MN            ------------------------------------------------------------------------   1608
JRCSF         -----C-------------------------------------------------------------AT---   1611
JRFL          -----C-------------------------------------------------------------AT---   1599
OYI           -----------------------------------G------------------------A--CA----   1599
CAM1          --A----------A----------------------------------------------------------   1599
HAN           ---------------------------A-------G--------------------------------   1596
D31           ------------------------------------------------------------A--------   1599
RF            ----------------------------------------------------A------G-----------   1596
YU2           -----C---------------------------------------------A------------------   1599
BCSG3C        -----C-------------------------------------------------------A--------   1599
P896          ------------------------------------------------------------------------   1599
RET7          ---------A-----------------------------------------------------A--------   1134
VE1RT         -----C-------A-----------------------------------------G------------   1134
VE2RT         -------------A----------------------------------------------------------   1134
VE3RT         -------------T-----------------G-------GT-------------------A---T----   1134
VE4RT         ------------------------------------------------------------G-----------   1134
VE5RT         -----CA------------------------------------------------------------------   1134
VE6RT         ----TC-------A-----------------------------------A------------------   1134
VE7RT         ------------------------------------------------------------------------   1134
VE8RT         ------------A----------------------G--------------------G-----------   1134
HX330BC       ------------------------------------------------------------TA--------   1134
HX660BC       ------------------------------------------------------------A--------   1134
HXBCRT        ------------------------------------------------------------TA--------   1134
PD165BC       G-------A---------------------------G----------------------------T----   1134
PD330BC       G-------A---------------------------G----------------------------T----   1134
PD495BC       G-------A---------------------------G----------------------------T----   1134
PD660BC       G-------A---------------------------G----------------------------T----   1134
PDBCRT        G-------A---------------------------G----------------------------T----   1134
3202A12       ------------------------------------------------------------------CA----   1599
3202A21       ---------------------C-------------------------------------A--------   1599
MANC          --A----------A---------------------------------------------G--A--------   1599
WEAU160       ----G-------------------------------------------------G------A--------   1599

CONSENSUS-D   AAGAAtGAGGGGTGCCCACACTAATGATGTAAAaCAATTAgCAGAGGcAGTGCAAAaAATAtCCACAGAA   1596
ELI           ----------------------------------G----------------------G-------------   1596
Z2Z6          ---------------------------------------------T----------------------   1596
NDK           -----C-----------------------------------A--------------------G--------   1596

CONSENSUS-O   TAGGCAAAAGGCCTCCCACACAAATGATATAAGACAATT?GCAGAAGTA?TCCAGAAGGTGTCTCAAGAA   1424
ANT70         ---------------------------------------A---------A--------------------   1587
MVP5180       ---------------------------------------G---------G--------------------   1587

CONSENSUS-U   AAGAATAAAGTCTGCCCACACTAATGATGTAAAACAATTAACAGAAGCAGTGCAAAAGATAGCCCAAGAA   1596
MAL           ------------------------------------------------------------------------   1596

CONSENSUS-CPZ ?AG?C??A????A?C?CACAC?AATGA??T?AGGCAA?T?GC?G?AG?AGT?CAAAAAAT?G?????GAA   1112
CPZGAB        C--A-AA-GGTC-G-A-----A-----CA-C------C-G--G-A--C---A--------T-CTACT---   1593
CPZANT        T--G-CT-CAGG-A-T-----T-----GG-T------T-A--T-G--T---G--------A-GATTA---   1608
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CONSENSUS-A   AGCATAGTAATATGGGGAAAGA?CCCTAAATTTAGACTACCCATACAAA??GA?ACATGGGAA?CATGGT   1509
U455          ----------------------T--------------------------AG--A---------G------   1666
IBNG          ----------------------C--------------------------GA--G---------A------   1669

CONSENSUS-B   aGCATAgTAATATGGGGAAAgActCCtAAATTTAaactacCCATaCAaAAaGAaACATGGGAaaCaTGGT   1668
SF2           ----------------------T--------------------------G------------G------   1669
LAI           --------------------------------------------------G-------------------   1705
HXB2R         -------------------------------------G-----------G-------------------   1669
NL43          -------------------------------------T-------------G------------G------   1669
NY5CG         -------------------------------------T-------------G------------G-G----   1669
LW123         --------------------------------------------------G-------------------   1669
MN            ----------------------------------G-----------------------------------   1678
JRCSF         ----------------------T-------------T---------------------------------   1681
JRFL          ----------------------T-------------T---------------------------------   1669
OYI           ------------------------------------------------------------------G------   1669
CAM1          -------------------------------------T-------------G-----------TG------   1669
HAN           G---------------------------------G---------------G------------G------   1666
D31           ------------------------------------------------------------------G------   1669
RF            -----------------------------------------------------------------GG------   1666
YU2           ------------------------------------------------------------------------   1669
BCSG3C        T-----A-------------A-------------G---G-------------------------------   1669
P896          ------------------------------------C...----T-----G------------G------   1665
RET7          ----------------------T---------------G--------G----------------------   1204
VE1RT         G-----------------------------------------------------------------------   1204
VE2RT         -----------------------C-----------------------------------------------   1204
VE3RT         ------------------------------------G------------------------------------   1204
VE4RT         ----------------------------------G----------------------------G------   1204
VE5RT         -----------------------C--------------G-------------------------------   1204
VE6RT         -----------------------C--------------G-------------------------------   1204
VE7RT         ------------------------------------G------------------------------------   1204
VE8RT         ----------------------T---A-------------------------G---------G------   1204
HX330BC       ------------------------------------------------------------------------   1204
HX660BC       ------------------------------------------------------------------------   1204
HXBCRT        -------------------------------------G-----------------------------------   1204
PD165BC       ----------------------------------G----------------------------G------   1204
PD330BC       ----------------------------------G----------------------------G------   1204
PD495BC       ----------------------------------G----------------------------G------   1204
PD660BC       ----------------------------------G----------------------------G------   1204
PDBCRT        ------------------------------------G----------------------------G------   1204
3202A12       ------------------------------------------------------------------G------   1669
3202A21       ---------------------------------------G------------------------G------   1669
MANC          ------A---------------TC--C-----------------------------------CG------   1669
WEAU160       ------------------------------------------------------------------------   1669

CONSENSUS-D   AGCATAGTGATATGGGGAAaGACTCCTAAATTTAgAcTACCCATACAAAAGGAAACATGGGAAACATGGT   1666
ELI           -------------------G----------------------------------------------------   1666
Z2Z6          -------------------------------------T----------------------------------   1666
NDK           ----------------------------------A-------------------------------------   1666

CONSENSUS-O   ?CTATA?TTAT?TGGGG?AAATT?CCTAAATT?A?GCTGCCAGT?ACTAGAGAAACTTGGGAAAC?TGGT   1485
ANT70         T-----A----C-----A-----G--------T-A---------C--------------------A----   1657
MVP5180       G-----G----A-----G-----A--------C-G---------T--------------------T----   1657

CONSENSUS-U   AGCATAGTAATATGGGGAAAAACTCCTAAATTTAGACTACCCATACAAAAAGAAACATGGGAGGCATGGT   1666
MAL           ------------------------------------------------------------------------   1666

CONSENSUS-CPZ AG?ATAGT?AT?TGGGGA?A???ACC?AAATTT???TTACC??TA???A??GAAA?TTGGGA?GC?TGGT   1161
CPZGAB        --C-----A--T------A-AAC---T------AGG-----AG--CAG-AA----G------A--A----   1663
CPZANT        --T-----T--C------G-GGT---A------CAA-----CA--ACT-GG----C------T--C----   1678
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CONSENSUS-A   GGATGGAGTATTGGCAGGCTACCTGGATTCCTGAATGGGAGTTTGTCAATACCCCTCC?CTAGTAAAATT   1578
U455          ------------------------------------------------------------C-----------   1736
IBNG          ------------------------------------------------------------T-----------   1739

                                                                  /<- CRS
CONSENSUS-B   GGAcaGAgTATtgGcAAGCcACcTGGATtCCTGAgTGGGAGtTtGTcAATACcCCTCCcTTAGTgAAaTT   1738
SF2           ---TG--------------T-----------------------------------------------------   1739
LAI           ------------------------------------------------------------T-----------   1775
HXB2R         ----------------------------------------------T------------------------   1739
NL43          -------------------------------------------------------------------G--   1739
NY5CG         ----G-----------------------------A--------------------------------G--   1739
LW123         ------------------------------------------------------------T-----------   1739
MN            -----------AC-T--------------------------G----------------------------   1748
JRCSF         ------------------------------------------------------------------------   1751
JRFL          ------------------------------------------------------------------------   1739
OYI           ----G-----------------------------A-----------------------------A-----   1739
CAM1          ---T---C---------------------------------------------------------------   1739
HAN           ----G-------------------------------------------------------------------   1736
D31           -----------------------------------------------------------------------G--   1739
RF            ----------------------------------------------------------------A-----   1736
YU2           -------A----------------------------------------------------------------   1739
BCSG3C        ----------------------------------A-------------------------------------   1739
P896          -------T----------------------------------------------------------------   1735
RET7          ----------------------T----------------------------T-----------------   1274
VE1RT         ----------------------------C--------------C--------------------------   1274
VE2RT         ------------------------------------------------------------------------   1274
VE3RT         ----------------------------------A----------------------------A-----   1274
VE4RT         ------------------------------------------------------------------------   1274
VE5RT         ----------------------------------------------T------------------------   1274
VE6RT         ----------------------------------------------T------------------------   1274
VE7RT         ------------------------------------------------------------------------   1274
VE8RT         ---TG-------------------------------------------------------------------   1274
HX330BC       ----------------------------------------------T-----------T-----------   1274
HX660BC       ----------------------------------------------T-----------T-----------   1274
HXBCRT        ----------------------------------------------T-----------T-----------   1274
PD165BC       ---TG-------------------------------------------------------------A-----   1274
PD330BC       ---TG-----------------------------------------------A-----------A-----   1274
PD495BC       ---TG-----------------------------------------------A-----------A-----   1274
PD660BC       ---TG-----------------------------------------------A-----------A-----   1274
PDBCRT        ---TG-------------------------------------------------------------A-----   1274
3202A12       ------------------------------------------------------------------------   1739
3202A21       ------------------------------------------------------------------------   1739
MANC          ----------------------------------------------------------------A-----   1739
WEAU160       ------------------------------------------------------------------------   1739

CONSENSUS-D   GGgtAGAGTATTGGCAAGCCACtTGGATTCCTGAGTGGGAATTTGTCAATACCCCTCCTTTAGTAAAATT   1736
ELI           ---C---------------------------------------------------------------------   1736
Z2Z6          ------------------------------------------------------------------------   1736
NDK           --A-------------------C-------------------------------------------------   1736

CONSENSUS-O   GGGC?GA?TATTGGCA?GCCACCTGGATTCC?GAATGGGAATTTGTCAGCACACCCCCATTGATCAAATT   1551
ANT70         ----G--C--------A--------------A-------------------------------------   1727
MVP5180       ----A--A--------G--------------T-------------------------------------   1727

CONSENSUS-U   GGACAGAATATTGGCAAGCCACCTGGATCCCTGAATGGGAGTTTGTCAATACTCCTCCCCTAGTAAAACT   1736
MAL           ------------------------------------------------------------------------   1736

CONSENSUS-CPZ GG?CAGA?TA?TGGCAGGC?ACCTGGAT?CC?GAATGGGA?TTT?T?AATAC?CC?CC?TTA?T?A?A?T   1215
CPZGAB        --G----A--C--------A--------C--T--------A---A-C-----C--A--C---G-C-A-T-   1733
CPZANT        --T----C--T--------C--------A--A--------G---G-T-----A--C--A---A-T-G-C-   1748
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HIV1 POL

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CONSENSUS-A   ATGGTACCAGTTAGA?AAAGACCCCATAG?AGGAGCAGA?AC?TTCTATGTAGATGG?GCAGCTAATAG?   1642
U455          ---------------G-------------C---------G--A--------------G-----------G   1806
IBNG          ---------------A-------------T---------A--T--------------A-----------A   1809

                                        - - - CRS - - -
CONSENSUS-B   aTGGTAcCAGTTAGAgAaaGAaCCCATAgtAGGaGcAGAAACtTTcTAtGTAGATGGgGCAGCtAatAgg   1808
SF2           ----------------------------------------------------------------------   1809
LAI           ------------------------------------------G----------------------GC---   1845
HXB2R         ------------------------------------------C----------------------C---   1809
NL43          ----------------------------A-----------------------------------C------   1809
NY5CG         ---------------A--G---------A----------------------------A-----C------   1809
LW123         ------------------------------------------C----------------------C---   1809
MN            ----------------------------------T-------------------------------C---   1818
JRCSF         ---------------A------------------------------------------------C---   1821
JRFL          ------------------------------------------------------------------C---   1809
OYI           ---------------------C----------------------------------------------   1809
CAM1          ----------------------------------------------------------------------   1809
HAN           ----------------------------------------------------------------------   1806
D31           -----------------C----------------------------------------------------   1809
RF            G--------------A------------A-----------------------------------------A   1806
YU2           ----------------------------A-----------------------------------C---   1809
BCSG3C        ---------------------G-------A---C----------------------A--------C---   1809
P896          ------T-------------------------------------------------A--------C---   1805
RET7          -------------------------                                             1299
VE1RT         ---------------------C------------------------------------------C---   1344
VE2RT         ------------------------------------------C--------------A------------   1344
VE3RT         ------------------------------------------------------------------C---   1344
VE4RT         ----------------------------------T-----------------------------C---   1344
VE5RT         ----------------------------A-----------------------------------G----   1344
VE6RT         ----------------------------A-----------------------------------G----   1344
VE7RT         ----------------------------C-----------------------------------C---   1344
VE8RT         ---------------------------------------------T------------------------   1344
HX330BC       ------------------------------------------C----------------------GC---   1344
HX660BC       ------------------------------------------C----------------------GC---   1344
HXBCRT        ------------------------------------------C----------------------C---   1344
PD165BC       ---------------A--G----------------------C---------------------------   1344
PD330BC       ---------------A--G----------------------C---------------------------   1344
PD495BC       ---------------A--G----------------------C---------------------------   1344
PD660BC       ---------------A--G----------------------C---------------------------   1344
PDBCRT        ---------------A--G----------------------C---------------------------   1344
3202A12       ------------------G---------------------------------------------------   1809
3202A21       ------------------G---------------------------------------------------   1809
MANC          ------------------------------------------------C---------------------   1809
WEAU160       ------T-----------------------------------------------------------C-A-   1809

CONSENSUS-D   ATGGTACCAGTTAGAGAAGGAACCCATAATAGGAGCAGAAACTTTCTATGTAGATGGGGCAGCTAATAGA   1806
ELI           ----------------------------------------------------------------------   1806
Z2Z6          ----------------------------------------------------------------------   1806
NDK           ----------------------------------------------------------------------   1806

CONSENSUS-O   ATGGTAC??G?TAGAAA??GAACCTATT?T?GGGGCAGAAACCT?TTATGTAGATGGAGCAGCTAATAG?   1612
ANT70         -------AG-C------GT---------A-G-------------A------------------------A   1797
MVP5180       -------CA-T------CA---------G-A-------------T------------------------G   1797

CONSENSUS-U   ATGGTACCAGTTAGAAACAGAACCCATAGTAGGAGCAGAAACTTTCTATGTAGATGGGGCAGCTAATAGA   1806
MAL           ----------------------------------------------------------------------   1806

CONSENSUS-CPZ ?TGGTA?A?T?TA??G?CAGA?CCTAT?CCA????C?GA?AC?T?TTATGT?GATGG?GCAGC?AATAG?   1264
CPZGAB        A-----C-G-T--GA-A----A-----A---ACCA-A--T--T-A------A-----A-----A-----G   1803
CPZANT        C-----T-A-C--TT-G----C-----T---GAGG-T--A--C-T------T-----G-----T-----A   1818
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CONSENSUS-A   GA?ACTAAG?TAGGAAAAGCAGGGTATGTCACTGACAGAGGAAGACAAAAGGTTGTTTCCCTAACTGAGA   1710
U455          --A------C-------------------------------------------------------------   1876
IBNG          --G------A-------------------------------------------------------------   1879

                                          - - - CRS - - -
CONSENSUS-B   GAgACtAaAttAGGAAaAGCAGGATATGTtACTgacAgaGGaAGaCAaAaaGTTgTctCccTAactgACA   1878
SF2           ------------------------------------------------------------A--G------   1879
LAI           ---------------------------------A-T---------------------A------------   1915
HXB2R         ---------------------------------A-T---------------------A------------   1879
NL43          --A---------------------------A-------------------------C-------G----   1879
NY5CG         --A--------------------------A-----------T---------------C--T----G----   1879
LW123         ---------------------------------A---A------------G------C--------A---   1879
MN            ---------AA----------------------A----------------G--------------------   1888
JRCSF         ----------------------------------AG-----------------------------A----   1891
JRFL          ---------C-----------------------A-T----------------------------------   1879
OYI           ----------------------------------------------G----------------------   1879
CAM1          --A----G---------------------G--------------------------TC-------G----   1879
HAN           ------------------------------------G-------------------------A-----   1876
D31           ------------------------------------------------------------------------   1879
RF            ------------------------------------------------------------------------   1876
YU2           ---------------------------------A---AG-----------G--------------------   1879
BCSG3C        ---------------------------------A---A------------------A------------   1879
P896          --C--C----C------------------------------------------------------G------   1875
VE1RT         ------------------------------------------------------------AG---------   1414
VE2RT         ----------C----------------------A---A--------------------------------   1414
VE3RT         ------------------------------------------------------------------------   1414
VE4RT         ---------------------------------A-------------------------A--G------   1414
VE5RT         ------------------------------------------------------------C------------   1414
VE6RT         -------------------------------------T-A------G-----G----------A---------   1414
VE7RT         ----------------G----------------A---A------------G------A------------   1414
VE8RT         ------------------------------------------------------------------------   1414
HX330BC       ---------------------------------A-T---------------------A------------   1414
HX660BC       ---------------------------------A-T---------------------A------------   1414
HXBCRT        ---------------------------------A-T---------------------A------------   1414
PD165BC       -------------------------------------A----------------------A---------   1414
PD330BC       -------------------------------------A----------------------A---------   1414
PD495BC       -------------------------------------A----------------------A---------   1414
PD660BC       -------------------------------------A----------------------A---------   1414
PDBCRT        -------------------------------------A----------------------A---------   1414
3202A12       ------------------------------------------------------------------A-----   1879
3202A21       -------------------------------------------------------------------A-----   1879
MANC          ------------------------------------------------G---A---------------   1879
WEAU160       ---------------------------------A---------------G--------------------   1879

CONSENSUS-D   GAGACTAAATTAGGAAAaGCAGGATATGTTACTGACAGAGGAAGACAGAAAGTTGTCCCTTT?ACTGAcA   1875
ELI           ------------------------------------------------------------G-------   1876
Z2Z6          -----------------G-------------------------------------------T-----T-   1876
NDK           ------------------------------------------------------------C-------   1876

CONSENSUS-O   ?A?ACAAAACTAGGAAAGGC?GGATATGTTACAGAACAAGG?AAACAGAA?ATAATAAA?TTAGA?GAGA   1675
ANT70         G-G-----------------A--------------------G--------G--------A-----T----   1867
MVP5180       A-T-----------------G--------------------A--------C--------G-----A----   1867

CONSENSUS-U   GAAACTAAAAAGGGAAAAGCAGGATATGTTACTGACAGAGGAAGACAAAAGGTTGTCTCCTTAACTGAAA   1876
MAL           ------------------------------------------------------------------------   1876

CONSENSUS-CPZ ?A??C??AA???GGGAA?GCAGG?TATGT?ACAGACA?AGG?A?A???A???T?A????C?TA?AAAA?A   1306
CPZGAB        G-AA-AA--ACT-----A-----A-----A-------A---G-A-CAA-AAA-C-TTAG-T--G----T-   1873
CPZANT        A-CT-TC--TTG-----G-----C-----G-------G---A-G-AGT-GGG-A-AACA-C--C----G-   1888
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HIV1 POL

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CONSENSUS-A   CAACAAATCAAAAGACTGAATTACATGCAAT?CAT?TAGCCTT?CAGGATTCAGGATCAGAAGTAAATAT   1777
U455          -------------------------------C---C-------G--------------------------   1946
IBNG          -------------------------------T---T-------A--------------------------   1949

                                        - - - CRS - - -
CONSENSUS-B   CAACAAATCAGAagACTgAgtTAcAAGCaATTcAtcTAGCttTGCAgGAtTCgGGattaGAaGTAAAcAT   1948
SF2           -------------------A--------------------------------------------------   1949
LAI           ------------------------------------------------------------------T--   1985
HXB2R         --------------------------------T-----------------------------------   1949
NL43          ------------------------------------------------------------------   1949
NY5CG         -------------------A--------------------------------------------------   1949
LW123         -------------A------------------T-------------------A-----------------   1949
MN            ----------------------------------------------A-----A--G--------------   1958
JRCSF         -------------A--------------------C-----------------A-----------------   1961
JRFL          -------------A--------------------------G-----------------------------   1949
OYI           -------------------A---------------------C-----------------------------   1949
CAM1          -------------------A------------T-------------------------G-----------   1949
HAN           ------------------------------------------------------------C-------------   1946
D31           ----------------------------------------C-----------------------------   1949
RF            ------------------------------------------------------------------------   1946
YU2           --------------------------------T-----------------------------------   1949
BCSG3C        -----------------------G----------------------------T-----------------   1949
P896          --------------------C-----------------------------------------------   1945
VE1RT         -----------------A-----------------T----------A----------C---------T--   1484
VE2RT         --------------------------------T-----------------------------------   1484
VE3RT         -------------A--------------------------------------A-----------------   1484
VE4RT         ------------------------------------------------A---CC------------   1484
VE5RT         ------------------------------------------------C--------------------   1484
VE6RT         ------------------------------------------------------------------------   1484
VE7RT         ------------GA-------------------------------------A----C------------   1484
VE8RT         -------------A--------------------G------C-------------------G--------   1484
HX330BC       -------------------A----------------------------------------------T--   1484
HX660BC       -------------------A----------------------------------------------T--   1484
HXBCRT        --------------------------------T-----------------------------------   1484
PD165BC       ------------------------------------------------------A-----------------   1484
PD330BC       ------------------------------------------------------A-----------------   1484
PD495BC       ------------------------------------------------------A-----------------   1484
PD660BC       ------------------------------------------------------A-----------------   1484
PDBCRT        ------------------------------------------------------A-----------------   1484
3202A12       --------------------------------A-------------------A-----------------   1949
3202A21       -G-------------------------------A-------------------A-----------------   1949
MANC          ------------------------------------------------------A-----------------   1949
WEAU160       ----------------------------T-------------------------------------------   1949

CONSENSUS-D   CgACAAATCAGAAGACTGAGTTACAAGCAATTAATcTAGCtTTgCAGGATTCGGGATTAGAAGTAAACAT   1945
ELI           ----------------------------------------C-----------------------------   1946
Z2Z6          -A---------------------------------T-----------------------------------   1946
NDK           ------------------------------------------A--------------------------   1946

CONSENSUS-O   C?ACCAATCAAAA?GCTGAATTAATGGC??TATTA?TAGCCTT?CAGGATTCCAA?GA???AGTAAA?AT   1734
ANT70         -C-----------A--------------GA-----C-------A-----------A--AAC------T--   1937
MVP5180       -A-----------G--------------TG-----A-------G-----------G--GCA------C--   1937

CONSENSUS-U   CAACAAATCAGAAGACTGAATTACAAGCAATCCACTTAGCTTTACAGGATTCAGGATCAGAAGTAAACAT   1946
MAL           ------------------------------------------------------------------------   1946

CONSENSUS-CPZ CCAC?AATCA?CAAGCAGAATTA?AGGC??T?CTT?TGGC??T??AGGATTCA??????C??GT?AA?AT   1355
CPZGAB        ----T-----G------------A----TT-G---C----CT-GC--------GATCAA-AG--T--C--   1943
CPZANT        ----C-----A------------C----GA-T---A----TC-AG--------ACAGGC-CA--C--T--   1958
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CONSENSUS-A   AGTAACAGACTCACAGTATGCATTAGG?ATCATTCAGGCACAACCAGACAGGAGTGAATCAGA??TAGTC   1844
U455          ---------------------------G-----------------------------------AA-----   2016
IBNG          ---------------------------A-----------------------------------GT-----   2019

                                       CRS ->/
CONSENSUS-B   AGTaaCAGACTCaCAATATGCAtTaGGaATCATTCAaGCACAaCCAGATaaaAGtGAATCAGAgtTaGTC   2018
SF2           ----------------------------------------------------G------------------   2019
LAI           ----------------------------------------------------------------------   2055
HXB2R         ---------------------------------------------------C--------------------   2019
NL43          ---G--------------------G--------------------------G------------------   2019
NY5CG         ---G--------------------G--------------------------G------------------   2019
LW123         ----------------------------------------------------------------------   2019
MN            ----------------------------------------------------------------------   2028
JRCSF         ----------------------------------------------------------------------   2031
JRFL          ----------------------------------------------------------------------   2019
OYI           ----------------------------------------------------------------------   2019
CAM1          ----------------------------------------------------G------------------   2019
HAN           ----------------------------------------------------------------------   2016
D31           ----T-----------------A---------------------------G------------------   2019
RF            ------------------------G---------------------------------------------   2016
YU2           ----------------------------------------------------G-------------------   2019
BCSG3C        ----------------------------------------------------------------------A------   2019
P896          ---G-----------------------G--------------G---------------------------   2015
VE1RT         ----------------------------------------------------------------------   1554
VE2RT         -----------------------------------G--------------------------------   1554
VE3RT         -----------------------------------G-----G-------T--------------------   1554
VE4RT         ----------------------------------------------------------------A-----   1554
VE5RT         ----------------------------------------------------G--------------G---   1554
VE6RT         ----------------------------------------------------------------------   1554
VE7RT         ----------------------------------------------------------------A-----   1554
VE8RT         ----------------------------------------------------G-----------AA-----   1554
HX330BC       -------------------------------------------------------C---------------   1554
HX660BC       -------------------------------------------------------C---------------   1554
HXBCRT        ---------------------------------------------------C--------------------   1554
PD165BC       ------------------------------------------G--------G------------------   1554
PD330BC       ------------------------------------------G--------G------------------   1554
PD495BC       ------------------------------------------G--------G------------------   1554
PD660BC       ------------------------------------------G--------G------------------   1554
PDBCRT        ------------------------------------------G--------G------------------   1554
3202A12       ----------------------------------------------------G------------------   2019
3202A21       ----------------------------------------------------G------------------   2019
MANC          ----T-----------------------------------------------G------------------   2019
WEAU160       ---G--------C-----------------------------------C-G------------------   2019

CONSENSUS-D   AGTAACAGATTCACAATATGCAtTAGGAATCATTCAAGCACAACCAGATAAGAGTGAATCAGAGTTAGTC   2015
ELI           ----------------------------------------------------------------------   2016
Z2Z6          ----------------------------------------------------------------------   2016
NDK           ----------------------C-----------------------------------------------   2016

CONSENSUS-O   AGTAACAGA?TCACAATATG?ATTGGGC?TCAT?TCCTCCCAACC?ACACAGAGTGA?TCCCCTATAGTT   1798
ANT70         ---------T----------C-------G----C-----------T-----------A------------   2007
MVP5180       ---------C----------T-------A----A-----------A-----------C------------   2007

CONSENSUS-U   AGTAACAGACTCACAGTATGCATTAGGGATTATTCAAGCACAACCAGATAAAAGTGAATCAGAGATTGTT   2016
MAL           ----------------------------------------------------------------------   2016

CONSENSUS-CPZ AGT?AC?GA?TCACAATATG??TT?GG??T??T?CA???????CCAGATCA?AGTGAATCA????TAGT?   1401
CPZGAB        ---G--T--C----------TG--A--GA-TA-T--GTCACAG--------C---------GAAT----C   2013
CPZANT        ---C--A--T----------CA--G--AG-CT-G--AGGTACC--------A---------CCCC----G   2028
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HIV1 POL

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CONSENSUS-A   AATCAAATAATAGAGAAGCTAATA?AAAAGGA?AAAGTCTACCTGTCATGGGTACCAGC?CACAAAGGGA   1911
U455          ------------------------G-------A--------------------------G----------   2086
IBNG          ------------------------A-------C--------------------------A----------   2089

CONSENSUS-B   AgtCAaATAATAGAgcAgtTAATAAAaAAGGAaAAgGTCTAcCTggCATGGGTACCaGCACAcAAAGGaA   2088
SF2           ------------------------------------------------------------------------   2089
LAI           -A--------------------------------------T----------------------------   2125
HXB2R         -A--------------------------------------T----------------------------   2089
NL43          -----------------------------------A--------------------------------   2089
NY5CG         -----------------------------------A--------------------------T-------   2089
LW123         -A--------------------------------------T----------------------------   2089
MN            ----------------------------------------T----------------------------   2098
JRCSF         --------------A---C----------------A----------------------------------   2101
JRFL          -----------------------------------A--------------------------------   2089
OYI           ------------------------------------------------------------------------   2089
CAM1          ---------------G--------------------------------------------------------   2089
HAN           ------------------------------------------------------------------------   2086
D31           ---------------------------------------------A------------------------   2089
RF            -----G------------------------------------------------------------G-   2086
YU2           ----------------------------------------T----------------------------   2089
BCSG3C        ------------------------------------------------------------------------   2089
P896          ------------------------------------------------------------------------   2085
VE1RT         ---------------G--------------------------------------------------------   1624
VE2RT         -A-----------------------------------------------------------------------   1624
VE3RT         -A--------------------------------A--------------------G-------------   1624
VE4RT         -A-----------------------------------------------------------------------   1624
VE5RT         --C-----------------------G-----------------------------------------   1624
VE6RT         --------------------------------G-------------------------------------   1624
VE7RT         ------------------------------------------------------------------------   1624
VE8RT         ------------------------------------------------------------------------   1624
HX330BC       ------------------------------------------------------------------------   1624
HX660BC       ------------------------------------------------------------------------   1624
HXBCRT        -A--------------------------------------T----------------------------   1624
PD165BC       ------------------------------------------------------------------------   1624
PD330BC       ------------------------------------------------------------------------   1624
PD495BC       ------------------------------------------------------------------------   1624
PD660BC       ------------------------------------------------------------------------   1624
PDBCRT        ------------------------------------------------------------------------   1624
3202A12       --------------A---C-------------------------------------------------   2089
3202A21       ------------------------------------------------------------------------   2089
MANC          -----------------A--------------------------------------------T-------   2089
WEAU160       --------------A----------------------------A-------------------------   2089

CONSENSUS-D   AgTCAAATAATAGAGCAGtTAATAAAAAAGGAAAAGGTTTACCTGGCATGGGTACCAGCACAcAAAGGAA   2085
ELI           -A-----------------------------------------------------------------------   2086
Z2Z6          ------------------------------------------------------------T-------   2086
NDK           ------------------C-----------------------------------------------------   2086

CONSENSUS-O   CAGCA?ATAATAGAGGAACTAACAAAAAAGGAAC??GTGTATCTTACATGGGTTCCTGC?CA?AAAGGCA   1863
ANT70         -----A----------------------------AG-----------------------C--T-------   2077
MVP5180       -----G----------------------------GA-----------------------T--C-------   2077

CONSENSUS-U   AATCAAATAATAGAGCAATTAATACAGAAGGACAAGGTCTACCTGTCATGGGTACCAGCACACAAAGGGA   2086
MAL           ------------------------------------------------------------------------   2086

CONSENSUS-CPZ ?A??A?ATAAT??A??A?TTAAT?AAAA?AGAA?A?AT?TACCTCTCCTGGGTACCAGCACA?AAAGG?A   1455
CPZGAB        A-TC-G-----AG-AG-G-----T----A----A-A--C-----------------------C-----T-   2083
CPZANT        G-AG-A-----CC-GA-A-----A----G----C-G--T-----------------------T-----C-   2098
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CONSENSUS-A   TTGGAGGAAATGA?CAAGTAGATAAATTAGTCAGT??TGGAATCAGGAAGGT?CTATTTTTAGATGG?AT   1976
U455          -------------G---------------------TC---------------G--------------G--   2156
IBNG          -------------A---------------------AA---------------A--------------C--   2159

CONSENSUS-B   TTGGaGGAAATGAaCAaGTAGAtaaatTaGTCAGTgCtGGaaTcAGgAaAgTaCTATTTTTagATGGaAT   2158
SF2           ------------------------------------------------------------------GA-------   2159
LAI           ------------------------------------------------------------------------   2195
HXB2R         ------------------------------------------------------------------------   2159
NL43          -----------------------GGG--G-----------------------------------------   2159
NY5CG         ------------------------------------------------------------------------   2159
LW123         ------------------------------------------------------A-------------------   2159
MN            ------------------------------------------------------------------------   2168
JRCSF         ----------------G-----------------------------------G-----------------   2171
JRFL          ------------------------------------------------------G-----------------   2159
OYI           ------------------------------------------------------------------G--------   2159
CAM1          ------------------------------------------------------------------------   2159
HAN           ----------------------------------------------A-----------------------   2156
D31           ------------------------------------------------------------------G--------   2159
RF            ------------------------G----------A-------------------------G--------   2156
YU2           ----------------------------------------G----------------------------   2159
BCSG3C        ----------------------------------------GG---------------------------   2159
P896          ------------------------------------------------------------------------   2155
VE1RT         --------------------------C-----------------------------                   1680
VE2RT         ----G-----------------C-----------------------A-G-------                   1680
VE3RT         -----------------------------------A--------------------                   1680
VE4RT         ------------------------------------------T------A-----                   1680
VE5RT         -----------------------------------T--------------------                   1680
VE6RT         --------------------------C-----------------------------                   1680
VE7RT         -------------G-----------------------------------A-----                   1680
VE8RT         -----------------------------------A------------G-------                   1680
HX330BC       ------------------------------------------------------------------------   1694
HX660BC       ------------------------------------------------------------------------   1694
HXBCRT        ------------------------------------------------------------------------   1694
PD165BC       -------------------------------------A------------------                   1680
PD330BC       -------------------------------------A------------------                   1680
PD495BC       -------------------------------------A------------------                   1680
PD660BC       -------------------------------------A------------------                   1680
PDBCRT        -------------------------------------A------------------                   1680
3202A12       ------------------------------------------------------------------G--------   2159
3202A21       ------------------------------------------------------------------G--------   2159
MANC          -------------------------------------G--------------------------------   2159
WEAU160       ------------------------------------T-A-----------------------------G--   2159

CONSENSUS-D   TTGGAGGAAATGAACAAGTAGATAAATTAGTCAGTCAgGGAATCAGGAAAGTACTATTTTTGGATGGAAT   2155
ELI           -------------------------------------A--------------------------------   2156
Z2Z6          ------------------------------------------------------------------------   2156
NDK           ------------------------------------------------------------------------   2156

CONSENSUS-O   TAGGAGGAAATGAAAAAATAGATAAATTAGTAAGCAA?GA?ATTAGAAGAGTCCTGTTCCT?GAAGGAAT   1930
ANT70         -------------------------------------G--T--------------------A--------   2147
MVP5180       -------------------------------------A--C--------------------G--------   2147

CONSENSUS-U   TTGGAGGAAATGAACAAGTAGATAAATTAGTCAGCAGTGGAATCAGAAAGGTACTATTTTTAGATGGGAT   2156
MAL           ------------------------------------------------------------------------   2156

CONSENSUS-CPZ TAGGAGGAAATGA?CA?GT?GA?AAATTAGTCAGT??AGG?ATCAG??AAGT?CT?TT?CT?GA?GG?AT   1510
CPZGAB        -------------G--A--G--T------------GC---A-----GA----G--A--C--A--T--A--   2153
CPZANT        -------------A--G--A--C------------CA---G-----AC----C--C--T--G--A--C--   2168
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HIV1 POL

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CONSENSUS-A   AGATAA?GC?CAAGA?GA?CATGAAA?ATATCAC?GCAA?TGGA??GCAATGGCTAGTGATTTTAATCTG   2037
U455          ------G--T-----G--C-------A-------T----C----GA------------------------   2226
IBNG          ------A--C-----A--G-------G-------A----T----AG------------------------   2229

CONSENSUS-B   AGATAAGGCcCAAGAaGAaCATGAgAAATATCAcAgTAAtTGGAgAGCaATGGCTAgTGAtTTTAAccTg   2228
SF2           ------------------------------------------------------------------------   2229
LAI           ---------------T--------------------------------------------------------   2265
HXB2R         ---------------T--------------------------------------------------------   2229
NL43          -----------------------------------------------------------------------A   2229
NY5CG         -----------------------------------------------------------------------A   2229
LW123         ---------------T--------------------------------------------------------   2229
MN            ------------------C-----------------------------------------C--------A   2238
JRCSF         ------------------T-----A-----------------------------------------------   2241
JRFL          ------------------T------------------------A--------------------------   2229
OYI           ---------------G-----------------------C-----------------------------   2229
CAM1          ------------------------------------------------------------------------   2229
HAN           ------------------C-------------------------------------A-------------   2226
D31           ---------------T--G--------------------------------------------------   2229
RF            ---------------T--------------------------------------------------------   2226
YU2           ------------------------------------------------------------------------   2229
BCSG3C        ------------------------------------------------C------------------T-A   2229
P896          -----------------------------------C----------------------------------   2225
HX330BC       ------                                                                   1700
HX660BC       ------                                                                   1700
HXBCRT        ------                                                                   1700
3202A12       ------------------------------------------------------------------------   2229
3202A21       ------------------------------------------------------------------------   2229
MANC          ---------G-----------------------T--------------------------------T---   2229
WEAU160       ------------------------------------------------------------------------   2229

CONSENSUS-D   AGATAAgGCTCAaGAAGAACATGAGAAATATCACAACAATTGGAGAGCAATGGCTAGTGATTTTAACCTA   2225
ELI           ------------------------------------------------------------------------   2226
Z2Z6          ------A-----------------------------------------------------------------   2226
NDK           ------------G-----------------------------------------------------------   2226

CONSENSUS-O   AGA?CAGGCACAAGAAGATCATGAAAAATATCATAGTAATTGGA?AGCA?TAGCTAGTGA?TTTGGA?TA   1995
ANT70         ---C-----------------------------------------A----C----------A------C--   2217
MVP5180       ---T-----------------------------------------G----T----------C------T--   2217

CONSENSUS-U   AGATAAGGCTCAAGAAGAACATGAAAAATATCACAGCAATTGGAGAGCAATGGCTAGTGACTTTAATCTA   2226
MAL           ------------------------------------------------------------------------   2226

CONSENSUS-CPZ AGA?A??GC?CAAGA?GA?CATGA?A??TATCATAG?AATTGGA?A?C??T?GC???TGA?T??AAT?T?   1557
CPZGAB        ---C-GG--C-----A--A-----A-GG--------T-------A-G-TA-G--TAG---T-TT---T-A   2223
CPZANT        ---T-AA--T-----G--C-----T-AA--------C-------G-T-AT-A--AGA---A-AC---C-T   2238
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CONSENSUS-A   CCACCT?T?GTAGC?AA?GAAATAGT?GCCAGCTGT?ATAAATGTCA??T?AAAGGGGAAGCCATGCATG   2098
U455          ------G-G-----G--G--------A---------A----------AC-A-------------------   2296
IBNG          ------A-A-----A--A--------G---------G----------GA-G-------------------   2299

CONSENSUS-B   CCACCTgTAGTAGCAAAAGAAATAGTAGCCAGcTGTgATAAATGtCAGCTAAAAGGaGAAGCCATGCATG   2298
SF2           ------------------------------------------------------------------------   2299
LAI           ------------------------------------------------------------------------   2335
HXB2R         ------------------------------------------------------------------------   2299
NL43          ----------------------------------------------------------G-------------   2299
NY5CG         ------------------------------------------------------------------------   2299
LW123         ------------------------------------------------------------------------   2299
MN            ------A-----------------------------------------------------------------   2308
JRCSF         ------A-----------------------------------------------------------------   2311
JRFL          ------------------------------------------------------------------------   2299
OYI           ---------------------------------------------C------------------------   2299
CAM1          ------------------------------------------------------------------------   2299
HAN           ------------------------------------------------------------------------   2296
D31           ---------------------------------T--------------------------------------   2299
RF            ------------------------------------------------------------------------   2296
YU2           ------------------------------------------------------------------------   2299
BCSG3C        ------------------------------------------------------------------------   2299
P896          --------------------------------------A---------------------------------   2295
3202A12       ------------------------------------------------------------------------   2299
3202A21       ------------------------------------------------------------------------   2299
MANC          ------------------------------------------------------------------------   2299
WEAU160       ------------------------------------------------------------------------   2299

CONSENSUS-D   CCACCtGTGGTAGCaAAAGAAATAGTAGCTAGCTGTGATAAATGTCAGCTAAAAGGAGAAGCCATGCATG   2295
ELI           -----C------------------------------------------------------------------   2296
Z2Z6          ------------------------------------------------------------------------   2296
NDK           --------------G---------------------------------------------------------   2296

CONSENSUS-O   CCACCA?T?GT?GCCAAGGAAATCATTGCTAG?TGTCCTAAATG?CATATAAAAGGGGAAGCAA??CATG   2058
ANT70         ------G-G--G--------------------C-----------T-------------------TT----   2287
MVP5180       ------A-A--A--------------------T-----------C-------------------CG----   2287

CONSENSUS-U   CCACCTATAGTAGCGAAGGAAATAGTAGCCAGCTGTGATAAATGTCAACTAAAAGGGGAAGCCATGCATG   2296
MAL           ------------------------------------------------------------------------   2296

CONSENSUS-CPZ CC?CC?AT?GT?GC?AAAGAAAT??T?GC?CA?TGTGATAA?TG?CA?GTAAA?GGAGAAGCCA?GCATG   1612
CPZGAB        --A--C--A--A--A--------AG-G--C--T--------G--C--G-----A----------T-----   2293
CPZANT        --C--T--T--G--T--------TA-A--A--G--------A--T--C-----G----------G-----   2308
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HIV1 POL

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CONSENSUS-A   GACAAGTAGACTGT?GTCCAGG?ATATGGCAATTAGATTG?ACACAT?TAGAAGG?AAA?T?ATC?TAGT   2160
U455          --------------A-------G-----------------C------C-------A---G-A---C----   2366
IBNG          --------------G-------A-----------------T------T-------G---A-T---T----   2369

CONSENSUS-B   GaCAAGTAGAcTGTAGtCCaGGAATATGGCAaCTAGATTGtACACATtTaGAaGGAAAAgTTATCcTGGT   2368
SF2           ----------------------------------------------C-----------A----------   2369
LAI           ----------------------------------------------------------------------   2405
HXB2R         ----------------------------------------------------------------------   2369
NL43          ----------------C--------------G--------------------------------T----   2369
NY5CG         ----------------C--C-----------G--------------------------------T----   2369
LW123         ----------------------------------------------------------------------   2369
MN            ----------------------------------------------------------------------   2378
JRCSF         ------------------------------------------------------------A----------   2381
JRFL          ----------T-----------------------------------------------A----------   2369
OYI           ------------------------------------------------------------A----------   2369
CAM1          ------------------------------G---------------------------------------   2369
HAN           ------------------------------------------------------------A----------   2366
D31           ------------------------------------------------G--------------------   2369
RF            ----------T-----------------------------------C-----------A----------   2366
YU2           -G--------------------------------------------------------------------   2369
BCSG3C        ----------------------------------------C------C-----------A----------   2369
P896          ----------------------------------------C--------------------------   2365
3202A12       ------------------------------------------------------------A----------   2369
3202A21       ------------------------------------------------------------A----------   2369
MANC          ----------------------------------------------------------------------   2369
WEAU160       ------------------------------------------------------G------A----------   2369

CONSENSUS-D   GACAAGTAGACTGTAGTCCAGGAATATGGCAATTAGATTGTACACAttTaGAAGGAAAAGTTATCCTGGT   2365
ELI           ----------------------------------------------C-----------------------   2366
Z2Z6          ----------------------------------------------------------------------   2366
NDK           ---------------------------------------------C-G--------------------   2366

CONSENSUS-O   GTCA?GTAGACT?CAG?CCAGA??TATGGCAAAT?GATTG?ACACAT?T?GAAGGCAAAATCATAATAGT   2119
ANT70         ----G-------G---T-----AG----------A-----C------A-G--------------------   2357
MVP5180       ----A-------A---C-----GA----------G-----T------T-A--------------------   2357

CONSENSUS-U   GACAAGTAGACTGTAGTCCAGGGATATGGCAATTAGATTGCACACATCTAGAAGGAAAAATAATCATAGT   2366
MAL           ----------------------------------------------------------------------   2366

CONSENSUS-CPZ G?CA?GTAGACTG?AG?CCAGG?AT?TGGCAAGTAGATTG?ACCCA??TAGAAGG?AAAGT?ATCATAGT   1671
CPZGAB        -G--G--------T--C-----G--T--------------T-----CC-------C-----G--------   2363
CPZANT        -A--A--------C--T-----A--A--------------C-----TT-------T-----A--------   2378
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CONSENSUS-A   AGCAGTCCATGTAGCCAGTGGCTA?ATAGAAGCAGAAGTTATCCCAGCAGAAACAGGACAGGAGACAGCA   2229
U455          ------------------------C---------------------------------------------   2436
IBNG          ------------------------T---------------------------------------------   2439

CONSENSUS-B   aGCaGTtCATGTaGCcAGTGGaTAtATAGAAGCAGAaGTtATTCCAGcAGAgACAGGgCAgGAaACAGCA   2438
SF2           ------------------------------------------------------------------------   2439
LAI           ----------------------------------------------------A-------------------   2475
HXB2R         ----------------------------------------------------A-------------------   2439
NL43          --------------------------------------A--------------------A---------   2439
NY5CG         ------------G-------------------------A--------------------A---------   2439
LW123         ----------------------------------------------------A-------------------   2439
MN            ------------------------C-------------------------------------G------   2448
JRCSF         ----------------------------------------------------A-------------------   2451
JRFL          ----------------------------------------------------A-------------------   2439
OYI           ------------------------------------------------------------------------   2439
CAM1          ------G---------------------------------------------------------A---------   2439
HAN           ---------------T-----------------------C-------T----------------------   2436
D31           ------------------------------------------------------------------------   2439
RF            ---------------------C----------------------------A-----A------------   2436
YU2           ------------------------------------------------------------------------   2439
BCSG3C        G--G---------------------------------------------------------------------   2439
P896          ------------------------------------------------------------------------   2435
3202A12       ----------------------------------------------------A--------A---------   2439
3202A21       ----------------------------------------------------A--------A---------   2439
MANC          ------------------------------------G-------------------------------   2439
WEAU160       ------------------------------------------------------------A---------   2439

CONSENSUS-D   AGCAGTTCATGTAGCCAGTGGCTATATAGAAGCAGAAGTTATTCCAGCAGAAACaGGGCAgGAAACAGCA   2435
ELI           ------------------------------------------------------------------------   2436
Z2Z6          ------------------------------------------------------------------------   2436
NDK           ------------------------------------------------------G-----A---------   2436

CONSENSUS-O   TGCTGTCCATGT?GCAAGTG??TT?ATAGAAGCAGA?GTGATACCAGCAGAAACAGGACA?GAAACTGCC   2183
ANT70         ------------G-------GG--C-----------A-----------------------A---------   2427
MVP5180       ------------A-------AC--T-----------G-----------------------G---------   2427

CONSENSUS-U   AGCAGTCCATGTAGCCAGTGGATATATAGAAGCAGAAGTTATCCCAGCAGAAACAGGACAGGAGACAGCA   2436
MAL           ------------------------------------------------------------------------   2436

CONSENSUS-CPZ ?GCAGT?CA?GTA?C?AGTGGCT??ATAGAAGC?GAAGT?AT??CAG?TGAGACAGG??AA???ACAGC?   1723
CPZGAB        G-----T--C---G-C-------AT--------A-----T--CC---C---------AC--GAA-----T   2433
CPZANT        A-----G--T---T-T-------TC--------T-----A--GG---A---------GA--AGT-----A   2448
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HIV1 POL

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CONSENSUS-A   TACTTTATA?TAAAATTAGCAGGAAGATGGCCAGT?AAAGTAATACACACAGACAATGGCAGCAATTTCA   2297
U455          ---------C-------------------------A-----------------------------------   2506
IBNG          ---------T-------------------------G-----------------------------------   2509

CONSENSUS-B   TAcTTtcTctTAAAAtTAGCAGGaAGATGGCCAGTAAaAacAaTACAtACaGACAATGGcagcAAtTTCA   2508
SF2           --T-----------------------------------------------------------------------   2509
LAI           --------T---------------------------------------------------------------   2545
HXB2R         --T-----T-----------------------------------------T-------------------   2509
NL43          -----C-----------------------------------G--------------------------   2509
NY5CG         -----C-----------------------------------G--------------------------   2509
LW123         --T-----T-----------------------------------------------------------   2509
MN            -------------------------------------------------------------CC--------   2518
JRCSF         -----------------------C-------------C-------------------------------   2521
JRFL          -----------------------------------------------------------------------   2509
OYI           ------A-----------------------------------------------------------   2509
CAM1          ----------------------------------------------C-----------TG---------   2509
HAN           --T-----------------------------------------G-----------------CCT-------   2506
D31           ------A-----------------------------------------------------------C----   2509
RF            ------A--------------------------------GT-----------------------------   2506
YU2           -----------------------------------C-------------------------------   2509
BCSG3C        -----------------------------------------------------------------------   2509
P896          ---------C-------------C-----------------------------------------------   2505
3202A12       ------A------------------------------C--------------------------------   2509
3202A21       ------A------------------------------C--------------------------------   2509
MANC          -----------------------------------C-------------------------------   2509
WEAU160       ------A--------C--------------------------------------------------------   2509

CONSENSUS-D   TAtTTTcTtTTAAAATTAGCAGGAAGATGGCCAGTAAAAgTAGTACATACAGAcAATGGCAGCAATTTCA   2505
ELI           -----------------------------------------------------------------------   2506
Z2Z6          ------A----------------------------------A------------------------------   2506
NDK           --C-----C-------------------------------------------T----------------   2506

CONSENSUS-O   TA?TTCCTGTTAAAA?T?GC?GCAAGATGGCCTGT?AAAGTAATACATACAGACAA?GG?CCTAATTTTA   2246
ANT70         --C------------C-G--T--------------T--------------------C--G----------   2497
MVP5180       --T------------T-A--A--------------C--------------------T--A----------   2497

CONSENSUS-U   TACTTTATACTAAAATTAGCAGGAAGATGGCCAGTAAAAGTAGTACACACAGACAATGGCAGCAATTTCA   2506
MAL           -----------------------------------------------------------------------   2506

CONSENSUS-CPZ TA?TTCCTGTTAAAATTAGC??G?AGATGGCCAGTAAAAAC?AT?CACAC?GA?AATGG??C?AATTT?A   1781
CPZGAB        --T-----------------AG-T-----------------T--T-----A--T-----GC-A-----T-   2503
CPZANT        --C-----------------CA-C-----------------A--A-----T--C-----AG-T-----C-   2518
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CONSENSUS-A   CCAG?GCTGCAGT?AA?GC?G??TGTTGGTGGGCAAAT?TC??ACA?GAATTTGG?AT?CCCTACAATCC   2355
U455          ----C--------T--A--A-TC---------------A--CA---G--------G--C-----------   2576
IBNG          ----T--------A--G--G-CA---------------G--AC---A--------A--T-----------   2579

CONSENSUS-B   cCaGTaCtACgGTTAagGCCGCCTGTTGGTGGgCaGGgaTCAAGCAGGAATTTGGcATTCCCTACAATCC   2578
SF2           ------------------------------------------------------------------------   2579
LAI           ----------------------------------G--A-----------------A--------------   2615
HXB2R         --G--G---------G------------------G--A-----------------A--------------   2579
NL43          ----------A-----------------------G-----------------------------------   2579
NY5CG         ----------A-----A-----------------G-----------------------------------   2579
LW123         -----G----------------------------G--A-----------------A--------------   2579
MN            --------------------------------A-G--A--------------------------------   2588
JRCSF         ----------A-----------------------T-----------------------------------   2591
JRFL          -----------------------------------T-----------------------------------   2579
OYI           ------------------------------------------------------------------------   2579
CAM1          T---------A---------------------------------------------------------------   2579
HAN           ------------------------------------------------------------------------   2576
D31           -------A------------------------------G-------------------------------   2579
RF            ----------A-----------------------------------------------------------   2576
YU2           -----G----A-----A-----------------------------------------------------   2579
BCSG3C        -------C---------------------------------------------------------------   2579
P896          -------C--A------------------------------------------------------------   2575
3202A12       -----G-----------------------------------------------------------------   2579
3202A21       -----G-----------------------------------------------------------------   2579
MANC          ----------A-----------------------------------------------------------   2579
WEAU160       -----------------------------------G-----------------------------------   2579

CONSENSUS-D   CCAGTGCTgCAGTTAAGGCcGCCTGTTGGTGGGCAGGtATcAAACAGGAATTTGGAATTCCCTACAATCC   2575
ELI           ------------------------------------------------------------------------   2576
Z2Z6          -------------------T-------------------T------------------------------   2576
NDK           --------A----------------------------G-------------------------------   2576

CONSENSUS-O   CAAGT?CA?C?ATGAA?GCTGCATGTTGGTGG?C???CATACAACATGAGTTTGG?ATACCATATAATCC   2307
ANT70         -----A--A-T-----G---------------G-CAA------------------A--------------   2567
MVP5180       -----G--G-C-----A---------------A-AGG------------------G--------------   2567

CONSENSUS-U   CCAGTGCTGCAGTTAAAGCAGCCTGTTGGTGGGCAAATATCAAACAGGAATTTGGAATTCCCTACAACCC   2576
MAL           ------------------------------------------------------------------------   2576

CONSENSUS-CPZ CAAGTGC?GCAGT?AA?GC?GC?TGTTGGTGGGC??A?ATC?A?CAGGAATTTGGAATACC?TA?AATCC   1839
CPZGAB        -------T-----C--G--T--C-----------AG-C---A-G-----------------C--T-----   2573
CPZANT        -------A-----A--A--G--A-----------TA-T---C-A-----------------A--C-----   2588
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HIV1 POL

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CONSENSUS-A   CCAAAG?CAAGGAGTAGTGGAATC?ATGAA?AA?GAATTAAAGAAAAT?ATAGG?CAGGT?AGAGA?CAA   2417
U455          ------T-----------------C-----C--G--------------C-----G-----A-----G---   2646
IBNG          ------C-----------------T-----T--A--------------T-----A-----C-----T---   2649

CONSENSUS-B   CCAAAGTCAAGGaGTagTAGAATCTATGAATAAagAaTTAAAGaAAATTATAGGaCAgGTAAGAGATCAg   2648
SF2           --------------------------------T-----------------------------------   2649
LAI           -------------------------------------------------------C---------------   2685
HXB2R         ------------------------------------------------------------------------   2649
NL43          ----------------A-------------------------------------------------------   2649
NY5CG         ----------------A-------------------------------------------------------   2649
LW123         ------------------------------------------------------------------------   2649
MN            ----------------A-------------------------------------------------------   2658
JRCSF         ------------------------------------------------------------------------   2661
JRFL          ------------------------------------------------------------------------   2649
OYI           --------------------------------T-----------------------A------------   2649
CAM1          --------------------------------T----------------------------------A   2649
HAN           ------------G-----------------------G---------------------------------   2646
D31           ------------------------------------------------------------------------A   2649
RF            ----------------------------------C--------C--------------------------   2646
YU2           ------------------------------------------------------------------------   2649
BCSG3C        ------------------------------------------------------------------------   2649
P896          ------------------------------------------------------------------------   2645
3202A12       -------------------------------------------------------G---------------   2649
3202A21       -------------------------------------------------------G---------------   2649
MANC          ------------------------------------------------------------------------A   2649
WEAU160       ---------------GA-----------------------------------------------------A   2649

CONSENSUS-D   CCAAAGTCAAGGAGTAGTAGAATCTATGAATAAAGAATTaAAGAAAATTATAGGACAGGTAAGAGATCAA   2645
ELI           ------------------------------------------------------------------------   2646
Z2Z6          ----------------------------------------G-------------------------------   2646
NDK           ------------------------------------------------------------------------   2646

CONSENSUS-O   ACAAAGTCAAGGAGTAGTAGAAGCCATGAATAA?GAATTAAAATC?ATTATACAGCAGGTGAGGGACCAA   2375
ANT70         ----------------------------------G-----------A------------------------   2637
MVP5180       ----------------------------------A-----------T------------------------   2637

CONSENSUS-U   CCAAAGTCAAGGAGTAGTGGAATCTATGAATAAGGAATTAAAGAAAATCATAGGGCAGGTAAGAGAGCAA   2646
MAL           ------------------------------------------------------------------------   2646

CONSENSUS-CPZ ACA?AGTCAAGGAGT?GT?GAATCC?T?AATAAA?A??T?AAG?AAAT?ATAGGACA??TTAG?GA?CAA   1894
CPZGAB        ---G-----------G--A------T-A------G-GC-A---A----A--------GG----G--T---   2643
CPZANT        ---A-----------A--G------A-G------C-AT-G---C----T--------AA----A--C---   2658
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CONSENSUS-A   GCTGAACACCTTAAGACAGCAGTACA?ATGGCAGTATTCATTCACAATTTTAAAAGAAAAGGGGGGATTG   2486
U455          --------------------------A-------------------------------------------   2716
IBNG          --------------------------G-------------------------------------------   2719

CONSENSUS-B   GCTGAACAtCTTAAgAcAGCAGTACAaATGGCAGTATTcATCCACAATTTTAAaAGAAAAGGGGGGATTG   2718
SF2           --------C-----------------------------------------------------------   2719
LAI           ------------------------------------------------------------------   2755
HXB2R         ------------------------------------------------------------------   2719
NL43          ------------------------------------------------------------------   2719
NY5CG         ------------------------------------------------------------------   2719
LW123         ------------------------------------------------------------------   2719
MN            ----------------G-----------------------------------------------------   2728
JRCSF         ------------------------------------------------------------------   2731
JRFL          ------------------------------------------------------------------   2719
OYI           --------------------------------------T-------------------------------   2719
CAM1          ------------------------------------------------------------------   2719
HAN           ------------------------------------------------------------------   2716
D31           ------------------------------------------------------------------   2719
RF            ------------------------------------------------------------------   2716
YU2           ------------------------------------------------------------------   2719
BCSG3C        --------------A-----------------------T-------------------------------   2719
P896          ------------------------------------------------------------------   2715
3202A12       ------------------------------------------------------------------   2719
3202A21       ------------------------------------------------------------------   2719
MANC          --------------------------G--------------------------G----------------   2719
WEAU160       ------------------------------------------------------------------   2719

CONSENSUS-D   GCTGAaCATCTTAAGACAGCaGTACAAATGGCAGTATTcATCCACAATTTTAAAAGAAaAgGGGGGATTG   2715
ELI           -------------------------------------------------------G-A---------   2716
Z2Z6          -----G--------------T-----------------------------------------------   2716
NDK           --------------------------------------T-------------------------------   2716

CONSENSUS-O   GCAGA?CA?TTAA?AACAGCAGTACAAATGGCAGT?TTTGTTCACAATTTTAAAAGAAAAGGGGGGATTG   2441
ANT70         -----A--C----G---------------------A----------------------------------   2707
MVP5180       -----G--T----A---------------------C----------------------------------   2707

CONSENSUS-U   GCTGAACACCTTAAGACAGCAGTACAAATGGCAGTGTTCATTCACAATTTTAAAAGAAAAGGGGGGATTG   2716
MAL           ------------------------------------------------------------------   2716

CONSENSUS-CPZ GCAGAACA?TTAAA?ACAGCAGTA??AATGGCAGTG??CATTCACAATTTTAAAAGAAAAGGGGGGATTG   1958
CPZGAB        --------T-----A---------CA----------TT-------------------------------   2713
CPZANT        --------A-----G---------GT----------CA-------------------------------   2728
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HIV1 POL

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CONSENSUS-A   GGGG?TACAGTGCAGGGGAAAGAATAATAGA?ATAATAGCA?CAGA?ATACAAACTAAAGAA?TACAAAA   2551
U455          ----A--------------------------C---------A----C---------------T-------   2786
IBNG          ----G--------------------------T---------T----T---------------C-------   2789

CONSENSUS-B   GGGGgTACAGTGCAGGGGaAAGAATAgTAGacATAATAGCaaCAGAcATACAaAcTaAAgAAtTACAaAA   2788
SF2           ----A------------------------------------------------------------C-------   2789
LAI           ------------------------------------------------------------------------   2825
HXB2R         ------------------------------------------------------------------------   2789
NL43          ------------------------------------------------------------------------   2789
NY5CG         ------------------------------------------------------------T---------------   2789
LW123         ------------------------------------------------------------------------   2789
MN            ------------------------------G-------------------------------C-------   2798
JRCSF         --------------------------A---------------------------------------------   2801
JRFL          ------------------------------------------------------------------------   2789
OYI           -------------------------------T--------T---------------------C-------   2789
CAM1          --------------------------A-------------------T-----------------------   2789
HAN           ------------------------------------------------------------------------   2786
D31           ------------------------------------------------------------------------   2789
RF            ------------------------------------------------------------C-------   2786
YU2           ------------------------------------------------------------C----G--   2789
BCSG3C        ------------------------------------------------------------C-------   2789
P896          ----------------------------------------T--------------------C-------   2785
3202A12       ----A-------------------------------------------------------C-------   2789
3202A21       ----A-----------------------G--------------------------------C-------   2789
MANC          ------------------G-----------------------------------------------   2789
WEAU160       --------------------------A------------------------G---C--C----------   2789

CONSENSUS-D   GGGGATACAGTGCAGGGGAaAGAATAATAGACATAATAGCAACAGACATACAAACTAaAGAATTACAAAA   2785
ELI           ------------------------------------------------------------------------   2786
Z2Z6          -------------------G----------------------------------------------   2786
NDK           ------------------------------------------------------------G------------   2786

CONSENSUS-O   GGGGGTACACTGCAGG?GA?AG??TAATAGACATA?TAGCATCACAAATACAAACAACAGAA?TACAAAA   2505
ANT70         ----------------A--A--GA-----------T--------------------------T-------   2777
MVP5180       ----------------G--G--AC-----------C--------------------------C-------   2777

CONSENSUS-U   GGGGGTACAGTGCAGGGGAAAGAATAATAGACATGATAGCAACAGACATACAAACTAAAGAATTACAAAA   2786
MAL           ------------------------------------------------------------------------   2786

CONSENSUS-CPZ GGGGGTACAC??C?GG??A?AGAATA?TAGACATA?TAGCAACAGACATACA?ACAA???AATTACAAAA   2016
CPZGAB        ----------TG-A--GG-A------A--------A----------------A----GCG----------   2783
CPZANT        ----------AC-T--AC-G------T--------C----------------G----CTC----------   2798
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                                                  \/ 3′ sj
CONSENSUS-A   ACA?ATT??AAAAATTCAAAATTTTCGGGTTTATTACAGGGACAGCAGAGACCCCATTTGGAAAGGACCA   2618
U455          ---A---TC------------------------------------------------------------   2856
IBNG          ---G---AT------------------------------------------------------------   2859

CONSENSUS-B   aCAAATTACAAAaATTCAAAATTTTCGGGTtTATTACAGGGACAgCAgAgAtCCacTTTGGAAAGGACca   2858
SF2           G-----------------------------------------A--A------C---------------   2859
LAI           ----------------------------------------------------------------------   2895
HXB2R         ------------------------------------------------A--------------------   2859
NL43          -------------------------------------------------------G--------------   2859
NY5CG         -------------------------------------------------------G--------------   2859
LW123         ------------------------------------------------A--------------------   2859
MN            ----------------------------------------------------------------------   2868
JRCSF         ---------------------------------------------A----------A--------------   2871
JRFL          ------------------------------------------------G------------------   2859
OYI           ------------------------------------------------A------------------   2859
CAM1          ------------G---------------------------------------------------------   2859
HAN           ------------------------------------------------A---T--------------   2856
D31           ----------------------------------------------------------------------   2859
RF            -------------------------------------------------------------------AC   2856
YU2           ----------------------------------------------------------------------   2859
BCSG3C        ---------------------------------------------A--A----------------------   2859
P896          ----------------------------------------------------------------------   2855
3202A12       ----------------------------------------------------------------------   2859
3202A21       ----------------------------------------------------------------------   2859
MANC          G---------------------------------------------A--------------------   2859
WEAU160       ------------------------------C---------------------------------------   2859

CONSENSUS-D   ACAAATcAtAAAAATTCAAAATTTTCGGGTTTATTACAGgGACAGCAGAGATCCAATTTGGAAAGGACCA   2855
ELI           ------T--------------------------------A------------------------------   2856
Z2Z6          --------C-------------------------------------------------------------   2856
NDK           ----------------------------------------------------------------------   2856

CONSENSUS-O   ACAAATTTTAAAA?T??ACAA?TTTCGGGTCTATTACAGAGA?AGCAGAGACCCTAT?TGGAAAGGACCG   2569
ANT70         -------------N-TC----A--------------------C--------------C------------   2847
MVP5180       -------------A-CA----T--------------------T--------------T------------   2847

CONSENSUS-U   ACAAATTACAAAAATTCAAAATTTTCGGGTTTATTACAGGGACAACAGAGACCCAATTTGGAAAGGACCA   2856
MAL           ----------------------------------------------------------------------   2856

CONSENSUS-CPZ ?CAAATTTTAAAA?TTCAA?AATTTCGGGTT?ATTACAG?GA?AGCAGAGACCC??T?TGGAAAGGACC?   2076
CPZGAB        A------------G-----A-----------T-------A--C-----------AA-T-----------G   2853
CPZANT        T------------A-----C-----------C-------G--T-----------TG-G-----------A   2868
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HIV1 POL

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                          5' sj \/
CONSENSUS-A   GCAAAACTACTCTGGAAAGGTGAAGGGGCAGTAGTAATACA?GACAATAGTGATATAAAGGTAGTACCAA   2687
U455          ------------------------------------------A----------------------------   2926
IBNG          ------------------------------------------G----------------------------   2929

CONSENSUS-B   GCAAAGCTtCTcTGGAAAGGTGAAGGGGCAGTAGTAATACAaGATAATAgTGAcATAAAAGTAGTGCCAA   2928
SF2           ----------------------------------------------------------------------   2929
LAI           --------C-------------------------------------------------------------   2965
HXB2R         --------C-------------------------------------------------------------   2929
NL43          --------C-------------------------------------------------------------   2929
NY5CG         --------C-------------------------------------------------------------   2929
LW123         --------C-------------------------------------------------------------   2929
MN            ------------------------------------------------A---------------------   2938
JRCSF         ----------------------------------------------------------------------   2941
JRFL          ------------------------------------------------------T----------------   2929
OYI           -----------T----------------------------------------------------------   2929
CAM1          ----------------------------------------------------------------------   2929
HAN           ----------------------------------------------------------------------   2926
D31           --------C--------------------------------------------A----------------   2929
RF            ----------------------------------------------------------------------   2926
YU2           --------C-------------------------------------------------------------   2929
BCSG3C        ----------------------------------------------------------------------   2929
P896          ------------------------------------------G----------------------------   2925
3202A12       ----------------------------------------------------------------------   2929
3202A21       --------C-------------------------------------------------------------   2929
MANC          --------C--------------------------------------------A----------------   2929
WEAU160       ----------------------------------------------------------------------   2929

CONSENSUS-D   GCAAAGCTcCTCTGGAAAGGTGAAGGGGCAGTAGTAATACAAGACAAtAGTGACATAAAGGTAGTACCAA   2925
ELI           ----------------------------------------------G-----------------------   2926
Z2Z6          ----------------------------------------------------------------------   2926
NDK           --------T-------------------------------------------------------------   2926

CONSENSUS-O   GCACA?CTCCTGTGGAAAGGTGAGGG?GCAGTAGTCATACAAGATAA?GGAGACATTAA?GT?GTACCAA   2634
ANT70         -----G--------------------A--------------------G-----------G--A-------   2917
MVP5180       -----A--------------------G--------------------A-----------A--G-------   2917

CONSENSUS-U   GCAAAACTACTCTGGAAAGGTGAAGGGGCAGTAGTAATACAGGACAATAGTGATATAAAGGTAGTACCAA   2926
MAL           ----------------------------------------------------------------------   2926

CONSENSUS-CPZ GCA????T?CTGTGGAAAGGTGAAGGGGCAGTAGT?AT?CAGGATCAAGGGGAACTAAAGGTAGTACCAA   2139
CPZGAB        ---ACCT-A--------------------------G--C------------------------------   2923
CPZANT        ---CAAC-T--------------------------A--A--                                2909
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                                vif cds ->
CONSENSUS-A   GAAGAAAAGCAAA?ATCATTAGGGATTATGGAAAACAGATGGCAGGTGATGATTGT?TGGCAGGTAGACA   2755
U455          -------------G-----------------------------------------A-------------   2996
IBNG          -------------A-----------------------------------------G-------------   2999

CONSENSUS-B   GAAGaAAAGcAAAgaTcATtAGgGATTATGGAAAaCAGAtGGcagGTGATGATTGTGTGGCAaGtAGACA   2998
SF2           -------------A-------------------------------------------------------   2999
LAI           ----------------------------------------------------------------------   3035
HXB2R         ----------------------------------------------------------------------   2999
NL43          -------------------C--------------------------------------------------   2999
NY5CG         -------------------C--------------------------------------------------   2999
LW123         ----------------------------------------------------------------------   2999
MN            --------------G------------------------C------------------------C-----   3008
JRCSF         ---------T---A------------------------------------------------------   3011
JRFL          ---------T----------------------------------------------------------   2999
OYI           ----G---------------------------------------------------------------   2999
CAM1          ----------------------------------------------------------------------   2999
HAN           ------------------------------------------GCA-------------------------   2996
D31           ------------------------------------------------------------G-------   2999
RF            ----------------------------------------------------------------------   2996
YU2           ------------------------------------------------------------G-------   2999
BCSG3C        ----------------------A-----------------------------------------------   2999
P896          ----------------------------------------------------------------------   2995
3202A12       ----------------------------------------------------------------------   2999
3202A21       ----------------------------------------------------------------------   2999
MANC          ---------T------T-----------------G----------------------------G-------   2999
WEAU160       ----------------------------------------------------------------------   2999

CONSENSUS-D   GAAGAAAAGTAAAGATtATtAGGGATTATGGAAAACAGATGGCAGGTGATGATTGTGTGGCAAGTAGACA   2995
ELI           ----------------------------------------------------------------------   2996
Z2Z6          -------------------C--------------------------------------------------   2996
NDK           ----------------C-----------------------------------------------------   2996

CONSENSUS-O   GAAG?AAGGCAAAAATAATCAGAGA?TATGGAAAACAGATGGCAGGTACTGATAGTATGGCAA?T?GACA   2700
ANT70         ----G--------------------G-------------------------------------G-G----   2987
MVP5180       ----A--------------------T-------------------------------------A-A----   2987

CONSENSUS-U   GAAGAAAAGCAAAAATCATTAGGGATTATGGAAAACAGATGGCAGGTGATGATTGTGTGGCAGGTGGACA   2996
MAL           ----------------------------------------------------------------------   2996

CONSENSUS-CPZ GAAGGAAAGCAAAGATCATTAGAGATTATGGAAAACAGATGGCAGGTGATGATTGTGTGGCAAGTAGACA   2209
CPZGAB        ----------------------------------------------------------------------   2993
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CONSENSUS-A   GGATGA?GAT                                          2764
U455          ------A---                                          3006
IBNG          ------G---                                          3009

CONSENSUS-B   GGATGAGGATTAG                                       3011
SF2           ----------                                          3009
LAI           ----------                                          3045
HXB2R         ----------                                          3009
NL43          ----------                                          3009
NY5CG         ----------                                          3009
LW123         ----------                                          3009
MN            ----------                                          3018
JRCSF         ----------                                          3021
JRFL          ----------                                          3009
OYI           ----------                                          3009
CAM1          ----------                                          3009
HAN           ----------                                          3006
D31           ----------                                          3009
RF            ----------                                          3006
YU2           ----------                                          3009
BCSG3C        ----------                                          3009
P896          ----------                                          3005
3202A12       -------------                                       3012
3202A21       -------------                                       3012
MANC          ----------                                          3009
WEAU160       -------------                                       3012

CONSENSUS-D   GGATGAGGAT                                          3005
ELI           ----------                                          3006
Z2Z6          ----------                                          3006
NDK           ----------                                          3006

CONSENSUS-O   GACAGAAAGTGAAAGC?TGGAACAGCCT?GTGAAATACCA            2738
ANT70         ----------------G-----------A-----------            3027
MVP5180       ----------------A-----------G-----------            3027

CONSENSUS-U   GGATGAGGAT                                          3006
MAL           ----------                                          3006

CONSENSUS-CPZ GAATGAGGAT                                          2219
CPZGAB        ----------                                          3003
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        gag ->
CONSENSUS-A   TTTTTTAGGGAA...AATTTGGCCTTCCA?CAAGGGGAGGCCAGG?AATTT...................     46
CONSENSUS-B   ------------...g--C---------ca------a--------g-----??????????????????     48
CONSENSUS-D   ------------...g------------CA------A-----G--G--c-...................     48
CONSENSUS-O   ---------?--...?TAC------C-GGGGGGCAC---------C----A...................     46
CONSENSUS-U   ------------...-------------CA------A--------G-----...................     48
CONSENSUS-CPZ ------------??????????-?-???G??G??-?--?--------C--...................     29

CONSENSUS-A   .................TCCTCAGAG......CAGACC?GA?CCAACAGC?CCACCAGCAGA?A?CTTTG     88
CONSENSUS-B   ?????????????????--t------.....------A--g--------c-------a---G-G---Ca     95
CONSENSUS-D   ..................--T------.....------A--G--------C-----------G-G---C-     95
CONSENSUS-O   ..................-GTG----?......AC?-G?-??C---T----C-----?AT..........     75
CONSENSUS-U   ................C-T------.....------A--G--------C-----------G-G---C-     95
CONSENSUS-CPZ .................-GTG----A?????????-??---------?--------?AT---G--?-A-?     63

CONSENSUS-A   GGATGGGGGAA?AGAT??C???...CTC?CC.........?????A?CAGGA?C?GA??GA......CA?    122
CONSENSUS-B   --T-t------G---caa-AaCTCC---T-A?????????---GA-G-----g-c--tA--........--A    147
CONSENSUS-D   --T-T------G----...AACCCC---T-A............gA-A-----G-A--AA---------A    144
CONSENSUS-O   ....--A---GG?AG-GAA..............GG?ACA-GAGA-T---??--A--A--GGG??C?G?A    115
CONSENSUS-U   --T-T-----GG----AAA...ACC---T-A............GA-A-----G-A--AA--.......--A    144
CONSENSUS-CPZ ?-?A??A-?-?--???GA?---??????-??.............--?-?????-?-??--?????????--     72

                                          \/ protease                          <- gag cds
CONSENSUS-A   GG????......A?A??CTCCTTTA??TTCCCTCAAATCACTCTTTGGCAACGACCC?T?GT?ACAGTAA    174
CONSENSUS-B   --a.........-cTGTA-------gC--------g---------------------c-c--C---a---    208
CONSENSUS-D   --A.........-CTGTA-------aC-----------------------------C-t--c---A---    205
CONSENSUS-O   ?-A.........GCT-TA?--?--TGCC-----------C--------G-CA----AA-A-------C--    171
CONSENSUS-U   --A.........-TTGTA-------GC-----------------------------AG-T--C-------    205
CONSENSUS-CPZ ??G---???????CTA-?---??C?--?-----?-----?----------??----?---A--??---??    110

CONSENSUS-A   ?AATAG??GGACAGCT?ATAGAAGC?CTATTAGA?ACAGGAGCAGATGATACAGT?TTAGAAGACATAAA    237
CONSENSUS-B   ag----gG--G--A--a-Ag-----T--------T--------------------A--------a--G--    278
CONSENSUS-D   A-----GG--------A-AG-----T--------T--------------------A--------A--g--    275
CONSENSUS-O   -?G-T-GG--?--?--ATGT--?-?TT-?C-G--T-----?--------?-----A?--A-?A-----C-    230
CONSENSUS-U   G-G---GA--------A-A------T--------C--------------------A--------A-----    275
CONSENSUS-CPZ -??--?A---?--A??ATGT?-?--T?-??----T--------T-----?-----A?----G?GA--?C-    163

CONSENSUS-A   TTT?CCAGGAAAATGGAAACCAAAAAT?ATAGGGGGAATTGGAGGTTTTATCAAAGTAAGACA?TATGAT    304
CONSENSUS-B   ---G-------g----------------G-----------------------------------g------    348
CONSENSUS-D   ---G------------------------G-----------------------------------G------    345
CONSENSUS-O   A---GA-----?-----?---------G--------T--A-----?-----A-------A-G-----?-?    293
CONSENSUS-U   ---G------------------------G-----------------------------------G------    345
CONSENSUS-CPZ ?----A----???-----?-------?---?--?--------?--------????--??A-----?-?-?    212

CONSENSUS-A   CA?ATACTTATAGAAATTTGTGGAAAAAAG?C?ATAGGTACAGTATT?GTAGGACCTACACCTGTCAACA    370
CONSENSUS-B   --g-----c--------c------C-T--AG-T--------------A----------------------    418
CONSENSUS-D   --A-----C--------C------c-t--AG-T--------------A----------------------    415
CONSENSUS-O   A-TG-GACAG-----?-A?AA----?GG-?GTACAG--A--------G--G--------T-----T--T-    359
CONSENSUS-U   --A----------------------------G-T---------A----G----------------------    415
CONSENSUS-CPZ A--G---?C---?-?--?G?A-??-G?-?AGTA?---??------?--?-?-----A-??--?--A--?-    261

                                                 protease \/ p66, p51
CONSENSUS-A   TAATTGGA?G?AATATGTTGACTCAGATTGGTTGTACTTTAAATTTTCCAATTAGTCCTATTGAAACTGT    438
CONSENSUS-B   --------A-A---c-------------------c--------------c--------------------    488
CONSENSUS-D   --------A-A---T-------C--------C--C-----------------------------------    485
CONSENSUS-O   -T?----?A-A--?--A-----AGGAT-A--?-----AC----?--C--T--A--?--C--A-CCC-A--    423
CONSENSUS-U   --------C-A-----------------------------------------------------G-----    485
CONSENSUS-CPZ -?--?--?A-A---?-T--????-??T-?--?------?--???--?---------??A?-------?--    310

CONSENSUS-A   ?CCAGTAAAATTAAA?CCAG?AATGGATGGCCCAAAGGTTAAACAATGGCCATTGACAGAAGA?AAAATA    504
CONSENSUS-B   A--------------G----G---------------A--------------------------a------    558
CONSENSUS-D   A--------------G----G---------------A----------------------------A------    555
CONSENSUS-O   G--------?C----A----G---------A-----A--A-----------CC-AT-TA?----------    490
CONSENSUS-U   A--------------G----GG-------------G---------------------------A------    555
CONSENSUS-CPZ ---?--?-----?--A??--G---------?----??--A--?--------??-?T--??---------?    363

CONSENSUS-A   AAAGCATTAACAGA?ATTTGTA??GAGATGGAAAAGGAAGGAAAAATTTCAAAAATTGG?CCTGAAAATC    570
CONSENSUS-B   ---------gt---a-------Ca--a--------------g-----------------g----------    628
CONSENSUS-D   --------------A-------CA--a-------------------------G------G----------    625
CONSENSUS-O   G----??-?--?-CA--A---CA---A------C-?-----------?----G---A--A----------    553
CONSENSUS-U   --------------A-------AA--T----------------------T---------G----------    625
CONSENSUS-CPZ ?-?--C?---?---A------?A-?-??-?---???---???--?--?--?-?---A-----?--?--?-    409

CONSENSUS-A   CATACAATACTCCAGTATTTGC?ATAAAGAAAAAGGA?AG?ACTAAATGGAG?AAATTAGTAGATTTCAG    636
CONSENSUS-B   ----------------------c-----------a--c--T-----------a-----------------    698
CONSENSUS-D   --------------A-------C-----------A--C--T--C--G-----A-----------------    695
CONSENSUS-O   -T--T-----A--TA-?-----T-----A--G--A--T?-------?-----A-----G-----?--?--    617
CONSENSUS-U   ----------------------C-----------A--C--C-----------A--------GA-------    695
CONSENSUS-CPZ ----------?--?A-T-----A--?--A--G--A--C-?T?-?--------A--??----?--?-----    469

CONSENSUS-A   AGAACTCAATAA?AGAACTCA?GA?TTCTGGGA?GT?CA?TTAGGAAT?CC?CAT?C?GCGGG??TAAAA    694
CONSENSUS-B   ------t-----g--------a--c--------A--t--a--------A--A---C-c--a--gt-----    768
CONSENSUS-D   ------T-----G--------A--T--------a--T--A--------A--G---C-t--A--GC-g---    765
CONSENSUS-O   ?---T-A-----------A--A-----------G------?----T-----A---C---G---TT-?--G    678
CONSENSUS-U   ---G--T-----A--------A--T--T-----A--T--A--------A--A---C-T--T--GT-G---    765
CONSENSUS-CPZ ----?-A-----------A--A-----T------?----------?-----T--?C-A--?---T----?    526
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HIV1 POL CONSENSUS

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CONSENSUS-A   AAGAAAAAATCAGTAACAGT?CTAGATGTGGGGGA?GCATATTTTTCAGTTCC?TTAGAT?AA??CTTTA    758
CONSENSUS-B   --------------------a--g--------t--t-----------------c---------ga---c-    837
CONSENSUS-D   --------------------A--G--------T--T-----------------C------g--GAt----    835
CONSENSUS-O   C-A-?GC----T--T-----CT-------A--A--T--T-----C---TG?--------?CC-GA?----    743
CONSENSUS-U   --------------C-----AT-G-----------T--------------C--T------G--GAT--C-    835
CONSENSUS-CPZ ?-?--?--------G-----AT-?-----?--A--T--C--?--C--????--C?-?-----?GA?--?-    580

CONSENSUS-A   GAAAGTATACTGC?TT?AC?ATACCTAGT?TAAA?AATGAGACACCAGG??T?AG?TA?CAGTACAATGT    818
CONSENSUS-B   -g-----------A--T--C---------a----C--------------ga-T--a--T-----------    907
CONSENSUS-D   -G--A-----c--a--T--C---------A----c--------------GA-T--A--T-----------    905
CONSENSUS-O   ----A--?--------C--T--T------G-G-----------C-----A--A--A--C-----------    809
CONSENSUS-U   -G-----------A--C--T-----C---A-T--T--------------GA-T--A--T-----------    905
CONSENSUS-CPZ -?--A-----?--------A--T--?--?--?-----------C-----A-----A--T???--T-----    636

CONSENSUS-A   GCTTCC?CAGGGATGGAAAGG?TCACC??CAATATT?CAG???AGCATGACAAAAATCTTAGAGCCCTTT    880
CONSENSUS-B   ------a--------------a-----AG-------c--aaGt-------------------------t---    977
CONSENSUS-D   ------A--------------A-----GG-------C--AAGT---------------------------    975
CONSENSUS-O   C--C--G--A--?--------T-----AG-?--------?AGTTCA--------?--TC----T--A--?    873
CONSENSUS-U   ---A--A--------------A-----AG-------C---AGT--------------------A------    975
CONSENSUS-CPZ T?-?--A--A--?-----------?--A--T--?-----A-----?-----?--?--??---?A--?--?    687

CONSENSUS-A   AGA?CA?AA?ATCCAGA?ATAGT?ATCTA?CAATACATGGATGA?TT?TATGT?GGATCTGATTTAGAAA    941
CONSENSUS-B   ---AA-C--A-------c-----t-----t--------------t--G-----A--------c-------   1047
CONSENSUS-D   ---AA-C--A-------A-----T-----T--------------T--G-----A--------C-------   1045
CONSENSUS-O   --?A?--?CA-C-----A?---AA--T-?T--G-----?-----C?-A-----A-----A------CC??    933
CONSENSUS-U   ---A--A--A-------A-----C--A--C--------------T--G-----A--G-------------   1045
CONSENSUS-CPZ --?GA?A-G-----?-?-?-???---T-----?------------C----------?------?-?----    738

CONSENSUS-A   TAGGGCA?CATAGAGCAAAAATAGAGGA?TT?AGAG??CATCTA?TGA??TGGGGATT?A??AC?CCAGA    999
CONSENSUS-B   -------G------a-------------ac-G---caa-----gt---gg--------t-cc--a-----   1117
CONSENSUS-D   -------G------A-------------A--A----AA------T---GG--------T-CC--A-----   1115
CONSENSUS-O   -G?CAG-A------AA?-GG?-?--ATTGC-T--?-AA--??--TATCAG----------CT--C--T--    995
CONSENSUS-U   ----A--A------A-------------AC-A----AA------T---AA--------T-CC--A-----   1115
CONSENSUS-CPZ -T??T??A------?A--?G?-?--A?--C-----CAA---T-?C???-------??--?-------?--    783

CONSENSUS-A   CAAAAAGCATCAGAAAGAACCTCCATTTCTTTGGATGGG?TATGAACT?CATCCTGA?AAATGGACAGT?   1065
CONSENSUS-B   ------a--------------------c-----------T--------c--------t-----------a   1187
CONSENSUS-D   T-----A--------------c-----------------t--------C--------T-----------A   1185
CONSENSUS-O   ?----------?--G--------C---?-A--------------G--C--?--A--C--?--------A   1059
CONSENSUS-U   ---------------------C-----------------G--------C--C-----C-----------G   1185
CONSENSUS-CPZ ------?-----?--?--?--?--?---??A--------A-----G?----?--A--C--------?---    840

CONSENSUS-A   CAGCCT?TA?A?CT?CCAGAAAAAGACAGCTGGACTGTCAATGATATACAGAAATTAGT?GGAAAACTAA   1130
CONSENSUS-B   ------A--gtg--g-----------------------------c--------g-----G------T-g-   1257
CONSENSUS-D   ---t--A--A-a--G--------g--g-----------------------------g-----G--G---T---   1255
CONSENSUS-O   ---?-CA-CC-AT-G--T?-C--?--?GTG-----A--A-----------A---?--?-A-----??---   1121
CONSENSUS-U   ------A--C-A--G-----C--G--A-----------------------------G--G----------   1255
CONSENSUS-CPZ ---???A-?---?-A-----???---?G??-----?--?-----?--?--?---C-??-A-----?T---    889

CONSENSUS-A   ATTGGGCAAGTCAGATTTATGCAGG?ATTAAA?TAAAGCAACTGTGTA?ACT?CTCAGGGGAGCCAAAGC   1196
CONSENSUS-B   --------------------------G------G--------t-A----a---c--T------a-------   1327
CONSENSUS-D   -C--------C---------c----A------G---g----T-a----A---C--T------A-------   1325
CONSENSUS-O   --------------A--C---CA---A----G-G-?-?AG--T----?-AGT-AA-?--A--?A----?T-   1185
CONSENSUS-U   --------------------C----A------G--------T-A----A---C--T--------A-----   1325
CONSENSUS-CPZ ----------------?--?C----A--?---A??-----?T-?-----?---A-?--A---???--GA?    944

CONSENSUS-A   ACTAACAGATATAGTA?C?CTGACTGA?GAAGCAGAATTAGAATTGGCAGAGAACAGGGA?ATT......   1256
CONSENSUS-B   ---------Ag--a--c-a--a--A--A--------gc-----c-------A--------g---......   1391
CONSENSUS-D   ---------AG--a--C-A--A--A--A---------------C-------A--------A---......   1389
CONSENSUS-O   -T-?-----?G-----C-TT-A-G-A?A--G-----?C-?-----A-A?--A-----A--A-?G......   1242
CONSENSUS-U   ---------C------C-AT-A----CA--G-----------------------------A---......   1389
CONSENSUS-CPZ ?--?------??---?C?-?-?--???------------------A-?---A--T-???----???????    989

CONSENSUS-A   ...CTAAAAGA?CCTGT?CATGG?GTATATTATGACCCA?CAAAAGAC?TAGTAGCAGAA?TACAGAAAC   1317
CONSENSUS-B   ...--------a--a--a-----A--g------------t--------T--a--------a-------g-   1458
CONSENSUS-D   ...---------A--A--A-----A--G------------T--------T--A--------a---------   1456
CONSENSUS-O   ...?-----?----A--------------?--?C-?--TGA?--?--?--?TGG-TTA?TA-T-----G-   1295
CONSENSUS-U   ...---------A--A--G-----G---------------T--------T--A--------A-------G-   1456
CONSENSUS-CPZ ????--?????-??A?-A?-?---???--C---?-?--?G????-???C-?A?----???A---------   1025

CONSENSUS-A   AAGGGCAAGACCAATGGACATATCAAATTTATCAAGAGCCATTTAAAAAT?T?AAAACAGGAAAATATGC   1385
CONSENSUS-B   -g-------g-----------------------------------------c-g-----------------   1528
CONSENSUS-D   -------C-G------------C--------------A------------C-g-----------G-----   1526
CONSENSUS-O   -?--AG??-?G--------T--C--G?-A-----G--?GA-CA---G--CC----------?------?-   1356
CONSENSUS-U   -G-------GT----------------A--C-------A--A-------C-G--------G--G-----   1526
CONSENSUS-CPZ -?--?????G?--?-----?-----?--A-?---??-???-???--????T----??----?--------   1068

CONSENSUS-A   AA?AAA?AGGTCTGC?CACACTAATGATGTAAA?CAATTAACAGA?GT?GTGCAAAAAGT??C?A??GAA   1444
CONSENSUS-B   --g--tg---GG---C-----------------A-----------G-CA---------a-ag-C-ca---   1598
CONSENSUS-D   --G--tG---GG---C-----------------a------g----G-cA---------A-At-C-CA---   1596
CONSENSUS-O   T-GGC-A-A-G-CT-C-----A------A---GA-----?G----A--A?-C--G--G--GT-TCAA---   1424
CONSENSUS-U   --G--TA-A------C-----------------A-----------A-CA--------GA-AG-CCAA---   1596
CONSENSUS-CPZ ?-G?C?--????A?-------?-----??-?-GG---?-?G-?-?A-?A--?------A--G?-?-----   1112
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CONSENSUS-A   AGCATAGTAATATGGGGAAAGA?CCCTAAATTTAGACTACCCATACAAA??GA?ACATGGGAA?CATGGT   1509
CONSENSUS-B   ----------------------ct----------a--------------Aa--a---------a------   1668
CONSENSUS-D   --------G-------------CT-------------------------AG--A---------A------   1666
CONSENSUS-O   ?CT---?-T--?-----?--ATT?--------?-?G--G--AG-?ACT-GA--A--T------A-?----   1485
CONSENSUS-U   --------------------A-CT-------------------------AA--A--------GG------   1666
CONSENSUS-CPZ --?-----?--?------?-??-A--?------???T----??--???-----A-?T-----?G-?----   1161

CONSENSUS-A   GGATGGAGTATTGGCAGGCTACCTGGATTCCTGAATGGGAGTTTGTCAATACCCCTCC?CTAGTAAAATT   1578
                                                                        /<- CRS
CONSENSUS-B   ---ca-----------A--c--------------g------------------------cT----g-----   1738
CONSENSUS-D   --g-A-----------A--C--t-----------G-----A-----------------TT----------   1736
CONSENSUS-O   --GC?--?--------?--C-----------?--------A-------GC--A--C--AT-GA-C-----   1551
CONSENSUS-U   ---CA--A--------A--C--------C------------------------T-----C---------C-   1736
CONSENSUS-CPZ --?CA--?--?--------?--------?--?--------?---?-?-----?--?---T--?-?-?-?-   1215

CONSENSUS-A   ATGGTACCAGTTAGA?AAAGACCCCATAG?AGGAGCAGA?AC?TTCTATGTAGATGG?GCAGCTAATAG?   1642
                                        - - - CRS - - -
CONSENSUS-B   ---------------g-----a-------t---------A--t--------------g-----------g   1808
CONSENSUS-D   ---------------G--G--A------AT---------A--T--------------G-----------A   1806
CONSENSUS-O   -------??-?----A-??--A--T--T?T?--G-----A--C-?T-----------A------------   1612
CONSENSUS-U   ---------------A-C---A-------T---------A--T--------------G-----------A   1806
CONSENSUS-CPZ ?-----?A?T?--??G?C---?--T--?CC-????-?-------?T-----?-----------?------   1264

CONSENSUS-A   GA?ACTAAG?TAGGAAAAGCAGGGTATGTCACTGACAGAGGAAGACAAAAGGTTGTTTCCCTAACTGAGA   1710
                                        - - - CRS - - -
CONSENSUS-B   --g-----At-------------A-----t---------------------a-----c-----------C-   1878
CONSENSUS-D   --G-----AT-------------A-----T-----------------G--A-----CC-TT-?-----c-   1875
CONSENSUS-O   ?----A--AC-------G--?--A-----T--A--ACA---?-A---G--?A-AA-AAA?T--GA?----   1675
CONSENSUS-U   --A-----AAAG-----------A-----T---------------------------C---T-------A-   1876
CONSENSUS-CPZ ?--?-??-A-??--G--?-----?-----?--A----?---?-?-???-???-?A????-?--?AAA-?-   1306

CONSENSUS-A   CAACAAATCAAAAGACTGAATTACATGCAAT?CAT?TAGCCTT?CAGGATTCAGGATCAGAAGTAAATAT   1777
                                        - - - CRS - - -
CONSENSUS-B   ----------G--------g-----A-----T---c----t--G--------g----t---------c--   1948
CONSENSUS-D   -g--------G--------G-----A-----TA--c----t--g--------G----T---------C--   1945
CONSENSUS-O   -?--C--------?G--------ATG--??-ATTA-----------------CAA?GA???------?--   1734
CONSENSUS-U   ----------G--------------A-----C--CT----T--A-----------------------C--   1946
CONSENSUS-CPZ -C--?-----?C-AG-A------?-G--??---T---G--??--?--------??????C??--?--?--   1355

CONSENSUS-A   AGTAACAGACTCACAGTATGCATTAGG?ATCATTCAGGCACAACCAGACAGGAGTGAATCAGA??TAGTC   1844
                                        CRS ->/
CONSENSUS-B   ---------------A-----------a--------a-----------T-aa-----------gt-----   2018
CONSENSUS-D   ---------T-----A-----------A--------A-----------T-A------------GT-----   2015
CONSENSUS-O   ---------?-----A----?---G--C?----?TCCT-C-----?ACACA------?--CCCTA----T   1798
CONSENSUS-U   ----------------------------G--T-----A-----------T-AA-----------GA-T--T   2016
CONSENSUS-CPZ ---?--?--?-----A----??--?---?-??-?--???????-----TCA?---------??------?   1401

CONSENSUS-A   AATCAAATAATAGAGAAGCTAATA?AAAAGGA?AAAGTCTACCTGTCATGGGTACCAGC?CACAAAGGGA   1911
CONSENSUS-B   -g-------------c--t-----A-------a--g---------g-------------A--------a-   2088
CONSENSUS-D   -g-------------C--t-----A-------A--G--T------G-------------A--------A-   2085
CONSENSUS-O   C-G--?---------G-A----C-A-------AC??--G--T--TA-------T--T-----?-----C-   1863
CONSENSUS-U   ---------------C-AT-----C-G-----C--G----------------------A----------   2086
CONSENSUS-CPZ ?-??-?-----??-??-?T----?A---?A--A?-?A-?-----C--C-----------A--?-----?-   1455

CONSENSUS-A   TTGGAGGAAATGA?CAAGTAGATAAATTAGTCAGT??TGGAATCAGGAAGGT?CTATTTTTAGATGG?AT   1976
CONSENSUS-B   -------------a---------------------gC------------A--a--------------a--   2158
CONSENSUS-D   -------------A---------------------CAg-----------A--A--------G-----A--   2155
CONSENSUS-O   -A-----------AA--A-------------A--CAA?-A?--T--A-GA--C--G--CC-?--A--A--   1930
CONSENSUS-U   -------------A--------------------CAG---------A-----A--------------G--   2156
CONSENSUS-CPZ -A--------------?--?--?--------------A--?-----??-A-----?--?C-?--?-----   1510

CONSENSUS-A   AGATAA?GC?CAAGA?GA?CATGAAA?ATATCAC?GCAA?TGGA??GCAATGGCTAGTGATTTTAATCTG   2037
CONSENSUS-B   ------G--c-----a--a-----g-A-------A-T--t----gA--------------------c---   2228
CONSENSUS-D   ------g--T-----A--A-----G-A-------AA---T----GA--------------------C--A   2225
CONSENSUS-O   ---?C-G--A-----A--T-------A------TA-T--T-----A---?-A--------?---GGA?-A   1995
CONSENSUS-U   ------G--T-----A--A-------A-------A----T----GA--------------C--------A   2226
CONSENSUS-CPZ ---?-?------------------?--?-----TA-?--T-----A?-??-?--???---?-??---?-?   1557

CONSENSUS-A   CCACCT?T?GTAGC?AA?GAAATAGT?GCCAGCTGT?ATAAATGTCA??T?AAAGGGGAAGCCATGCATG   2098
CONSENSUS-B   ------g-A-----A--A--------A---------g----------GC-A-----a-------------   2298
CONSENSUS-D   ------G-G-----a--A--------A--T------G----------GC-A-----A-------------   2295
CONSENSUS-O   -----A-----?--C--G-----CA-T--T--?---CC------?--TA-A-----------A-??----   2058
CONSENSUS-U   ------A-A-----G--G--------A---------G----------AC-A-------------------   2296
CONSENSUS-CPZ --?--?A----?-----A-----??----?CA?---G----?--?---G-A--?--A-------?-----   1612

CONSENSUS-A   GACAAGTAGACTGT?GTCCAGG?ATATGGCAATTAGATTG?ACACAT?TAGAAGG?AAA?T?ATC?TAGT   2160
CONSENSUS-B   --------------A-------A---------C-------t------t-------A---g-T---c-G--   2368
CONSENSUS-D   --------------A-------A-----------------T------t-------A---G-T---C-G--   2365
CONSENSUS-O   -T--?-------?CA-?----A-?--------A-?--------------?-----C---A-C--AA----   2119
CONSENSUS-U   --------------A-------G-----------------C------C-------A---A-A---A----   2366
CONSENSUS-CPZ -?--?--------?A-?--------?------G----------C--?------------G-----A----   1671
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HIV1 POL CONSENSUS

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CONSENSUS-A   AGCAGTCCATGTAGCCAGTGGCTA?ATAGAAGCAGAAGTTATCCCAGCAGAAACAGGACAGGAGACAGCA   2229
CONSENSUS-B   ------t--------------a--t-----------------T--------g-----g-----a------   2438
CONSENSUS-D   ------T-----------------T-----------------T--------------G-----A------   2435
CONSENSUS-O   T--T--------?--A----??-T------------?--G--A-----------------?--A--T--C   2183
CONSENSUS-U   ---------------------A--T-------------------------------------------   2436
CONSENSUS-CPZ ?-----?--?---?-?-------?---------?-----?--??---?T--G-----??-A???-----?   1723

CONSENSUS-A   TACTTTATA?TAAAATTAGCAGGAAGATGGCCAGT?AAAGTAATACACACAGACAATGGCAGCAATTTCA   2297
CONSENSUS-B   ------c-ct-------------------------A---ac------t----------------------   2508
CONSENSUS-D   --t---c-tT-------------------------A------G----T----------------------   2505
CONSENSUS-O   --?--CC-GT-----?-?--?-C---------T--------------T--------?--?CCT-----T-   2246
CONSENSUS-U   ---------C-------------------------A------G---------------------------   2506
CONSENSUS-CPZ --?--CC-GT----------??-?-----------A---AC?--?-----?--?-----??C?-----?-   1781

CONSENSUS-A   CCAG?GCTGCAGT?AA?GC?G??TGTTGGTGGGCAAAT?TC??ACA?GAATTTGG?AT?CCCTACAATCC   2355
CONSENSUS-B   ----Ta--A-g--T--g--C-CC------------GGga--AAG--G--------c--T-----------   2578
CONSENSUS-D   ----T--------T--G--c-CC------------GG-A--AA---G--------A--T-----------   2575
CONSENSUS-O   -A--T?-A?-?A-G-----T-CA---------?-???CA-ACA---T--G--------A--A--T-----   2307
CONSENSUS-U   ----T--------T--A--A-CC---------------A--AA---G--------A--T--------C--   2576
CONSENSUS-CPZ -A--T--?-------------C------------??-?A---A?--G--------A--A--?--?-----   1839

CONSENSUS-A   CCAAAG?CAAGGAGTAGTGGAATC?ATGAA?AA?GAATTAAAGAAAAT?ATAGG?CAGGT?AGAGA?CAA   2417
CONSENSUS-B   ------T-----------A-----T-----T--a--------------T-----a-----A-----T--g   2648
CONSENSUS-D   ------T-----------A-----T-----T--A--------------T-----A-----A-----T---   2645
CONSENSUS-O   A-----T-----------A---G-C-----T-----------ATC?--T---CAG-----G--G--C---   2375
CONSENSUS-U   ------T-----------------T-----T--G--------------C-----G-----A-----G---   2646
CONSENSUS-CPZ A--?--T--------?--?-----C?-?--T--A?-??-?---?----------A--??-T--?------   1894

CONSENSUS-A   GCTGAACACCTTAAGACAGCAGTACA?ATGGCAGTATTCATTCACAATTTTAAAAGAAAAGGGGGGATTG   2486
CONSENSUS-B   --------t-----------------a--------------C-----------------------------   2718
CONSENSUS-D   --------T-----------------A--------------C-----------------------------   2715
CONSENSUS-O   --A--?--?T-A-?A-----------A--------?--TG-------------------------------   2441
CONSENSUS-U   -------------------------A--------G----------------------------------   2716
CONSENSUS-CPZ --A-----?T-A--?---------??A--------G??--------------------------------   1958

CONSENSUS-A   GGGG?TACAGTGCAGGGGAAAGAATAATAGA?ATAATAGCA?CAGA?ATACAAACTAAAGAA?TACAAAA   2551
CONSENSUS-B   ----g---------------------g----c---------a----c---------------t-------   2788
CONSENSUS-D   ----A---------------------------C---------A----C---------------T-------   2785
CONSENSUS-O   ----G----C------?--?--??-------C---?-----T--C-A--------A-C------------   2505
CONSENSUS-U   ----G---------------------------C--G------A----C---------------T-------   2786
CONSENSUS-CPZ ----G----C??-?--??-?------?----C---?-----A----C-----?--A-???--T-------   2016

                                                \/ 3′ sj
CONSENSUS-A   ACA?ATT??AAAAATTCAAAATTTTCGGGTTTATTACAGGGACAGCAGAGACCCCATTTGGAAAGGACCA   2618
CONSENSUS-B   ---A---AC-----------------------------------------t--ac---------------   2858
CONSENSUS-D   ---A--cAt-----------------------------------------T--A---------------   2855
CONSENSUS-O   ---A---TT----?-??-C--?--------C--------A--?-----------T--?-----------G   2569
CONSENSUS-U   ---A---AC-----------------------------------A---------A---------------   2856
CONSENSUS-CPZ ?--A---TT----?-----?-A---------?-------?--?-----------??-?-----------?   2076

                         5′ sj \/
CONSENSUS-A   GCAAAACTACTCTGGAAAGGTGAAGGGGCAGTAGTAATACA?GACAATAGTGATATAAAGGTAGTACCAA   2687
CONSENSUS-B   -----G--t--------------------------------a--T--------c-----A-----G----   2928
CONSENSUS-D   -----G--c--------------------------------A-----------C----------------   2925
CONSENSUS-O   ---C-?--C--G-----------G--?--------C-----A--T--?G-A--C--T--?--?-------   2634
CONSENSUS-U   ---------------------------------------G---------------------------   2926
CONSENSUS-CPZ ---????-?--G-----------------------?--?--G--TC-AG-G--AC---------------   2139

                              vif cds ->
CONSENSUS-A   GAAGAAAAGCAAA?ATCATTAGGGATTATGGAAAACAGATGGCAGGTGATGATTGT?TGGCAGGTAGACA   2755
CONSENSUS-B   -------------g-----------------------------------------G-----a-------   2998
CONSENSUS-D   ---------T---G--t-------------------------------------G-----A-------   2995
CONSENSUS-O   ----?--G-----A--A--C--A--?---------------------AC----A--A-----A?-?----   2700
CONSENSUS-U   -------------A-----------------------------------------G--------G----   2996
CONSENSUS-CPZ ----G--------G--------A--------------------------------G-----A-------   2209

CONSENSUS-A   GGATGA?GAT                                                              2764
CONSENSUS-B   ------G---TAG                                                           3011
CONSENSUS-D   ------G---                                                              3005
CONSENSUS-O   -ACA--AAG-GAAAGC?TGGAACAGCCT?GTGAAATACCA                                2738
CONSENSUS-U   ------G---                                                              3006
CONSENSUS-CPZ -A----G---                                                              2219
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