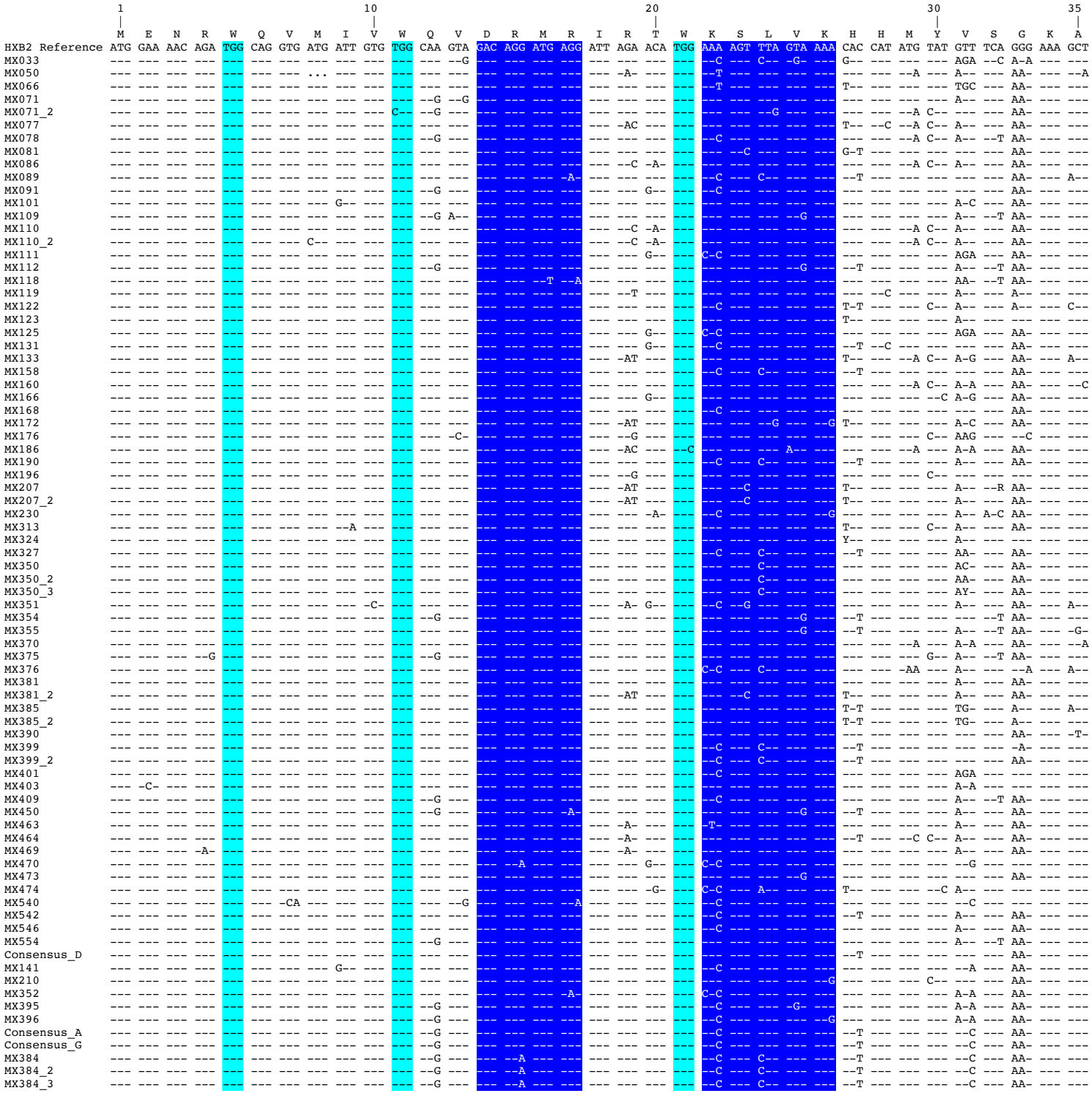
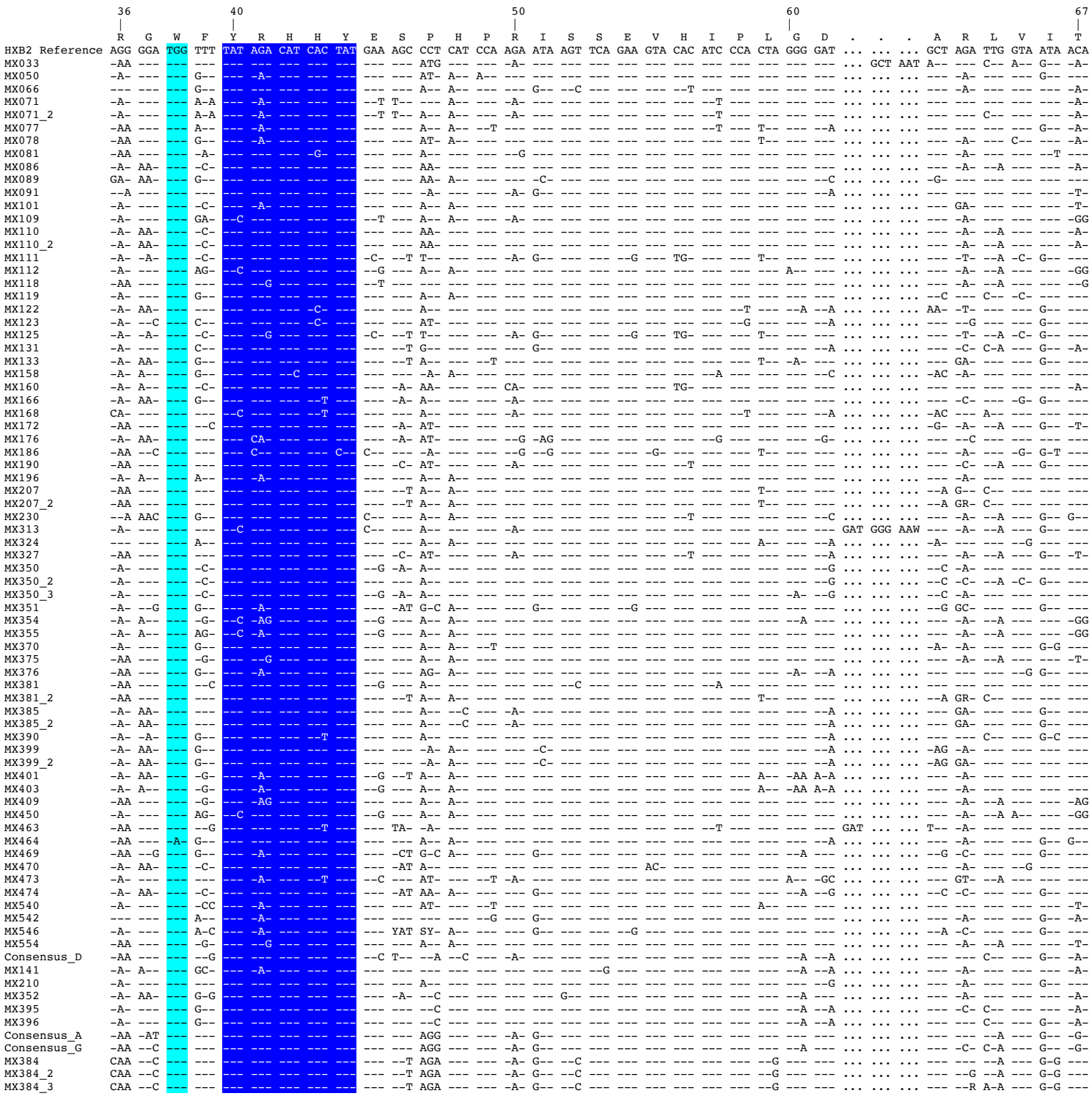
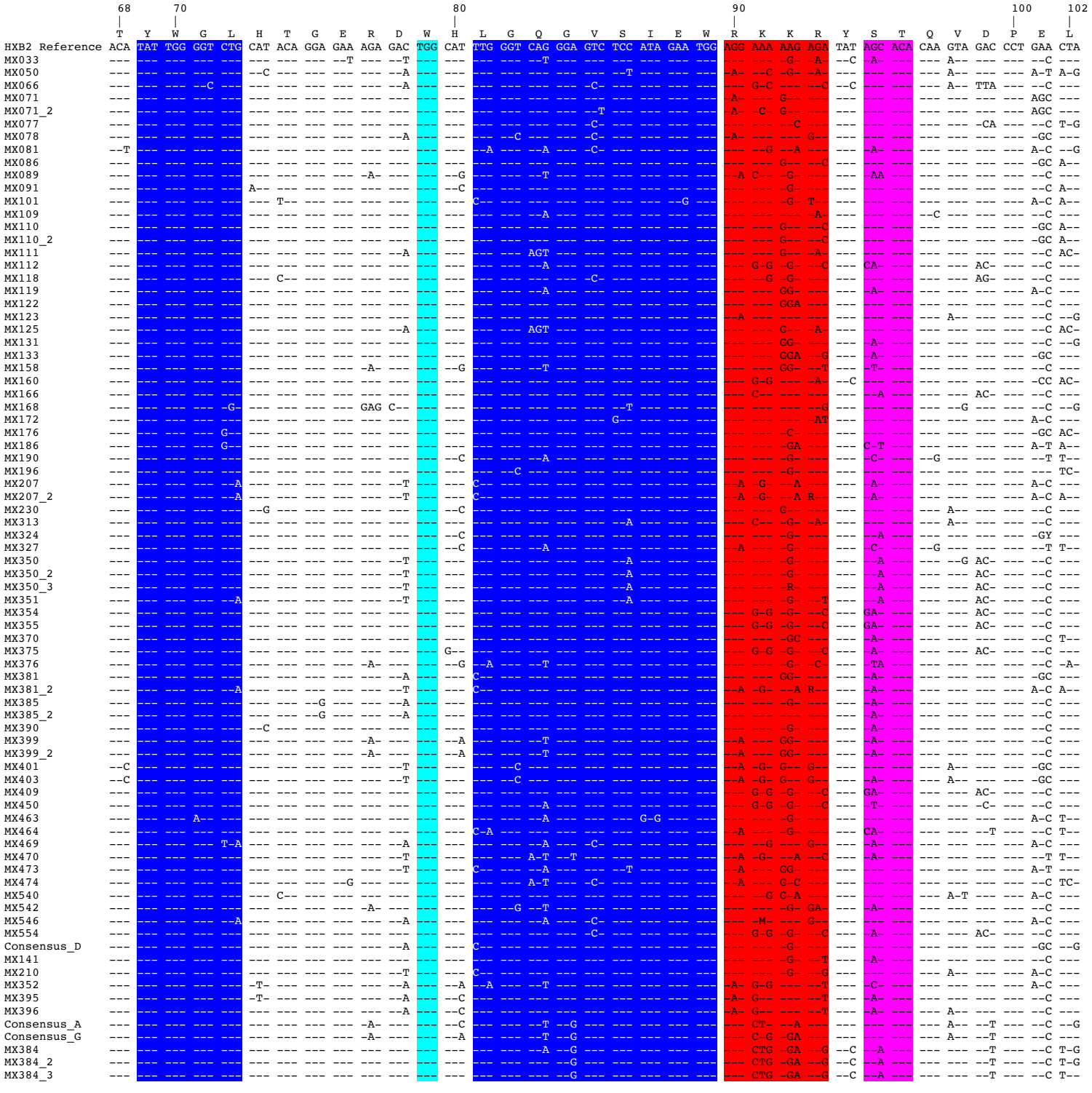
SURe v1.0 nucleotide sequence unanimity alignments for HIV-1 Vif encoding region (created Jun 23, 2015; reformatted Nov 19, 2018, v6)
Viral and Human Genomics Laboratory, Facultad de Medicina UASLP (http://midasmap.uaslp.mx/suretool/).
Ave. Venustiano Carranza #2405 Col. Filtros Lomas CP 78210 San Luis Potosí, SLP. Mexico



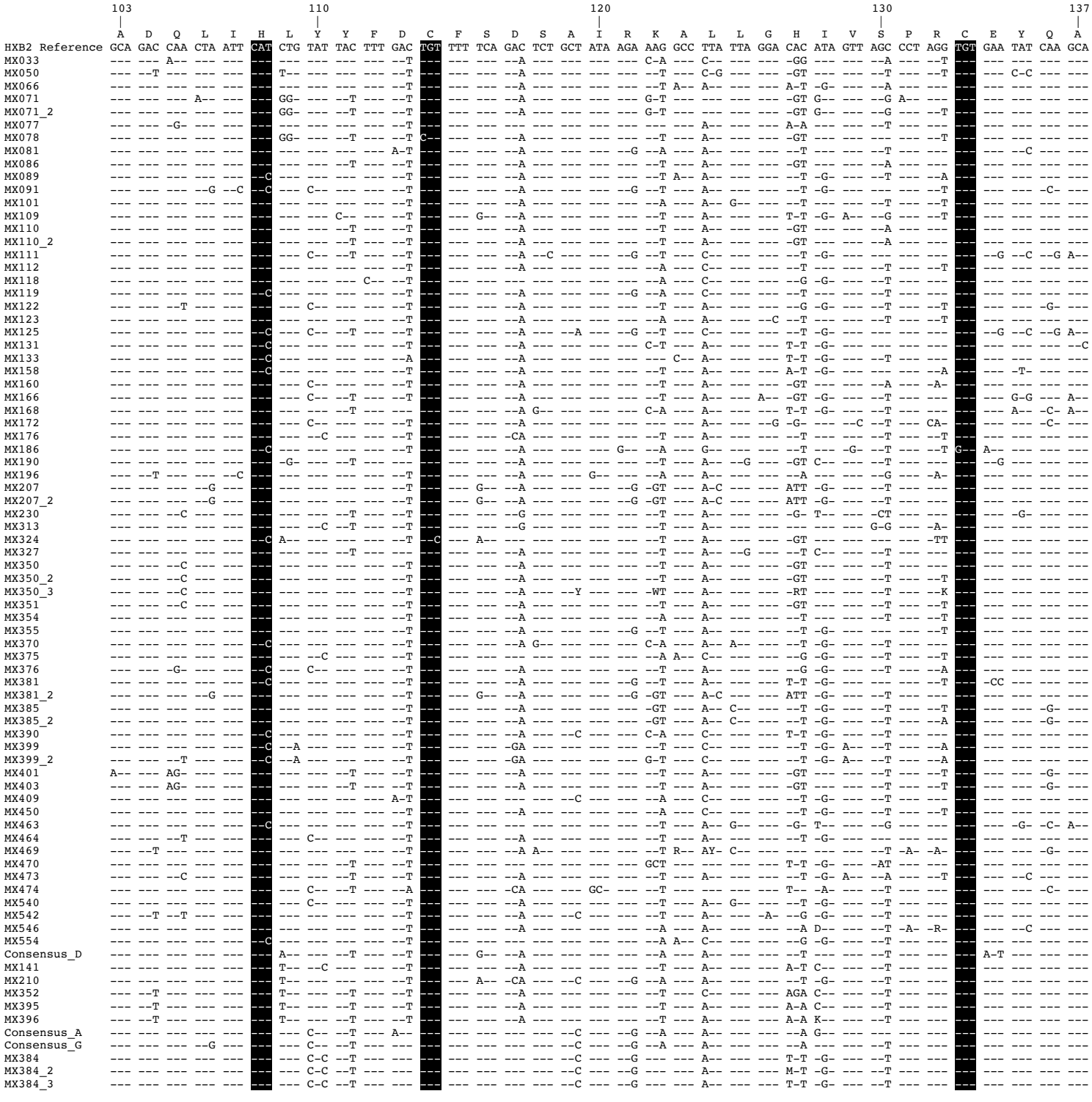
SURe v1.0 nucleotide sequence unanimity alignments for HIV-1 Vif encoding region (created Jun 23, 2015; reformatted Nov 19, 2018, v6)
Viral and Human Genomics Laboratory, Facultad de Medicina UASLP (http://midasmap.uaslp.mx/suretool/).
Ave. Venustiano Carranza #2405 Col. Filtros Lomas CP 78210 San Luis Potosí, SLP. Mexico



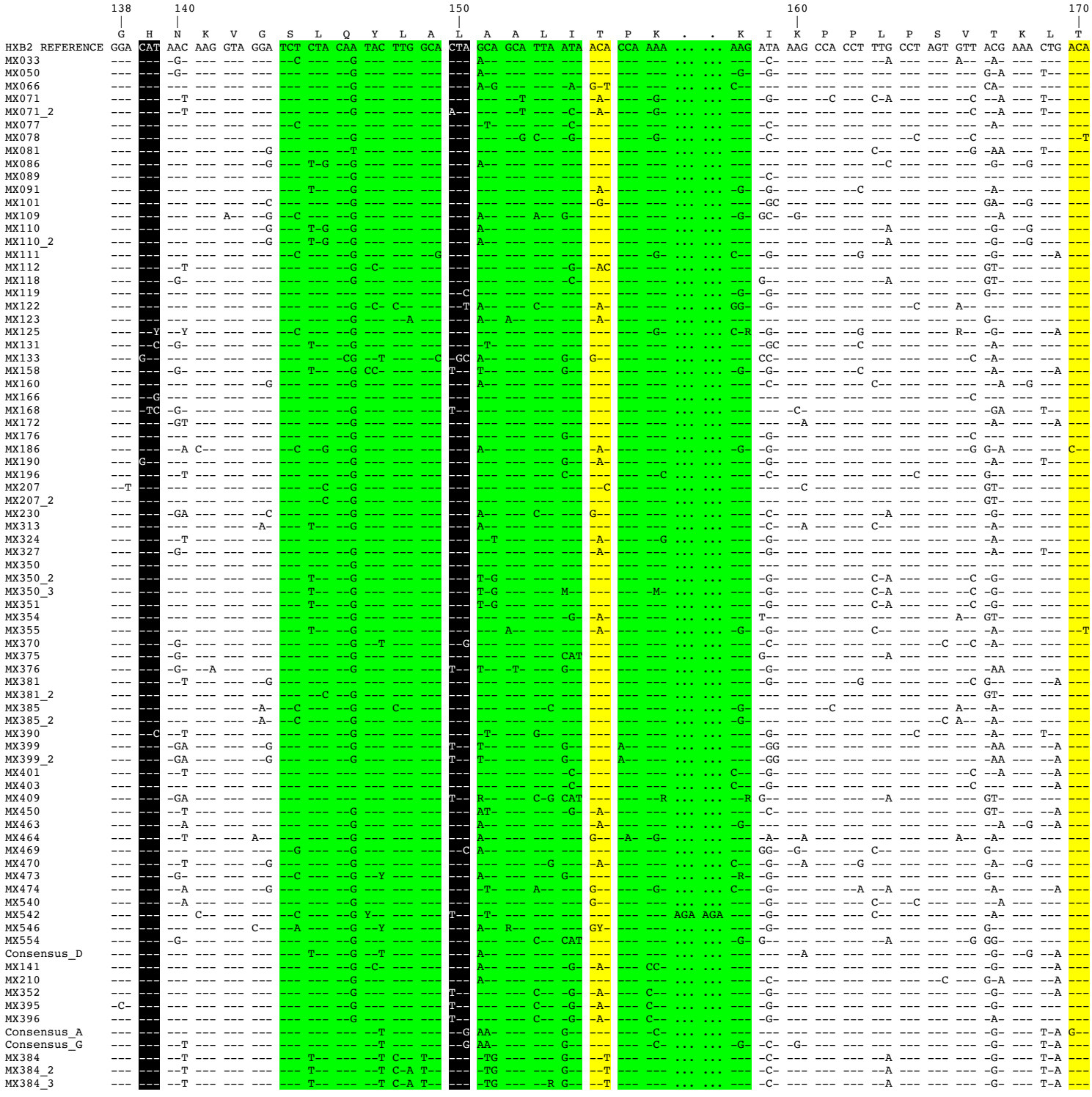
SURe v1.0 nucleotide sequence unanimity alignments for HIV-1 Vif encoding region (created Jun 23, 2015; reformatted Nov 19, 2018, v6)
Viral and Human Genomics Laboratory, Facultad de Medicina UASLP (http://midasmap.uaslp.mx/suretool/).
Ave. Venustiano Carranza #2405 Col. Filtros Lomas CP 78210 San Luis Potosí, SLP. Mexico



SURe v1.0 nucleotide sequence unanimity alignments for HIV-1 Vif encoding region (created Jun 23, 2015; reformatted Nov 19, 2018, v6)
Viral and Human Genomics Laboratory, Facultad de Medicina UASLP (http://midasmap.uaslp.mx/suretool/).
Ave. Venustiano Carranza #2405 Col. Filtros Lomas CP 78210 San Luis Potosí, SLP. Mexico



SURe v1.0 nucleotide sequence unanimity alignments for HIV-1 Vif encoding region (created Jun 23, 2015; reformatted Nov 19, 2018, v6)
Viral and Human Genomics Laboratory, Facultad de Medicina UASLP (http://midasmap.uaslp.mx/suretool/).
Ave. Venustiano Carranza #2405 Col. Filtros Lomas CP 78210 San Luis Potosí, SLP. Mexico


138
140
150
160
170
G H N K V G S L Q Y L A L A A L I T P K . . K I K P P L P S V T K L T
HXB2_REFERENCE GGA CAT AAC AAG GTA GGA TCT CTA CAA TAC TTG GCA CTA GCA GCA TTA ATA ACA CCA AAA ... ... AAG ATA AAG CCA CCT TTG CCT AGT GTT ACG AAA CTG ACA
MX033 --- --- -G- --- --- --- --C --- --G --- --- --- --- A-- --- --- --- ACA CCA AAA ... ... AAG -C- --- --- --- --A --- --- A-- -A- --- ---
MX050 --- --- -G- --- --- --- --- --- --G --- --- --- --- A-- --- --- --- ACA CCA AAA ... ... -G- -G- --- --- --- --- --- --- --- G-A --- T-- ---
MX066 --- --- --- --- --- --- --- --- --G --- --- --- --- A-G --- --- -A- G-T --- --- ... ... C-- --- --- --- --- --- --- --- CA- --- --- ---
MX071 --- --- --T --- --- --- --- --- --G --- --- --- --- --- --T --- --- -A- --- -G- ... ... --- -G- --- --C --- C-A --- --- --C --A --- T-- ---
MX071_2 --- --- --T --- --- --- --- --- --G --- --- --- A-- --- --T --- -C- -A- --- -G- ... ... --- --- --- --- --- --- --- --- --C --A --- T-- ---
MX077 --- --- --- --- --- --- --C --- --- --- --- --- --- -T- --- --- -C- --- --- --- ... ... --- -C- --- --- --- --- --- --- -A- --- --- ---
MX078 --- --- --- --- --- --- --- --- --G --- --- --- --- --- --G C-- -G- --- --- -G- ... ... --- -C- --- --- --- --- --C --- --C --- --- --- --T
MX081 --- --- --- --- --G --- --- --T --- --- --- --- --- --- --- --- --- --- --- --- ... ... --- --- --- --- C-- --- --- --G -AA --- T-- ---
MX086 --- --- --- --- --- --G --- T-G --G --- --- --- --- A-- --- --- --- --- --- --- ... ... --- --- --- --- --C --- --- --- -G- --G --- ---
MX089 --- --- --- --- --- --- --- --- --G --- --- --- --- --- --- --- --- --- --- --- ... ... --- -C- --- --- --- --- --- --- --- --- --- --- ---
MX091 --- --- --- --- --- --- --- T-- --G --- --- --- --- --- --- --- --- --- -A- --- --- ... ... -G- -G- --- --- --C --- --- --- -A- --- --- ---
MX101 --- --- --- --- --- --C --- --- --G --- --- --- --- --- --- --- --- --- -G- --- --- ... ... --- -GC --- --- --- --- --- --- GA- --G --- ---
MX109 --- --- --- --- A-- --G --C --- --G --- --- --- --- A-- --- A-- G-- --- --- --- ... ... -G- GC- -G- --- --- --- --- --- --- --A --- --- ---
MX110 --- --- --- --- --- --G --- T-G --G --- --- --- --- A-- --- --- --- --- --- --- ... ... --- --- --- --- --- --A --- --- --- -G- --G --- ---
MX110_2 --- --- --- --- --- --G --- T-G --G --- --- --- --- A-- --- --- --- --- --- --- ... ... --- --- --- --- --- --A --- --- --- -G- --G --- ---
MX111 --- --- --- --- --- --- --C --- --G --- --- --G --- --- --- --- --- --- --- -G- ... ... C-- -G- --- --- --G --- --- --- --- -G- --- --A ---
MX112 --- --- --T --- --- --- --- --- --G -C- --- --- --- --- --- --- -G- -AC --- --- ... ... --- --- --- --- --- --- --- --- GT- --- --- ---
MX118 --- --- -G- --- --- --- --- --- --G --- --- --- --- --- --- --- -C- --- --- --- ... ... --- G-- --- --- --- --A --- --- --- GT- --- --- ---
MX119 --- --- --- --- --- --- --- --- --- --- --- --- --C --- --- --- --- --- --- -G- ... ... -G- -G- --- --- --- --- --- --- --- G-- --- --- ---
MX122 --- --- --- --- --- --- --- --- --G -C- C-- --- --T A-- --- C-- --- -A- --- --- ... ... GG- -G- --- --- --- --- --C --- A-- --- --- --- ---
MX123 --- --- --- --- --- --- --- --- --G --- --A --- --- A-- A-- --- --- -A- --- --- ... ... --- --- --- --- --- --- --- --- G-- --- --- ---
MX125 --- --Y --Y --- --- --- --C --- --G --- --- --- --- --- --- --- --- --- --- -G- ... ... C-R -G- --- --- --G --- --- --- R-- -G- --- --A ---
MX131 --- --C -G- --- --- --- --- T-- --G --- --- --- --- -T- --- --- --- --- --- --- ... ... --- -GC --- --- --C --- --- --- --- -A- --- --- ---
MX133 --- G-- --- --- --- --- --- --- -CG --T --- --C -GC A-- --- --- G-- G-- --- --- ... ... --- CC- --- --- --- --- --- --- --C -A- --- --- ---
MX158 --- --- -G- --- --- --- --- T-- --G CC- --- --- T-- T-- --- --- G-- --- --- --- ... ... -G- -G- --- --- --C --- --- --- -A- --- --A ---
MX160 --- --- --- --- --- -G --- --- --G --- --- --- --- A-- --- --- --- --- --- --- ... ... --- -C- --- --- --- C-- --- --- --- --A --G --- ---
MX166 --- --G --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ... ... --- --- --- --- --- --- --- --- -C- --- --- --- ---
MX168 --- -TC -G- --- --- --- --- --- --G --- --- --- T-- --- --- --- --- --- --- --- ... ... --- --- -C- --- --- --- --- --- --- -GA --- T-- ---
MX172 --- --- -GT --- --- --- --- --- --G --- --- --- --- --- --- --- --- --- --- --- ... ... --- --- --A --- --- --- --- --- --- -A- --- --A ---
MX176 --- --- --- --- --- --- --- --- --G --- --- --- --- --- --- --- G-- --- --- --- ... ... -G- --- --- --- --- --- --- --- --C --- --- ---
MX186 --- --- --A C-- --- --- --C --G --G --- --- --- A-- --- --- --- -A- --- --- ... ... -G- -G- --- --- --- --- --- --- --G G-A --- --- C--
MX190 --- G-- --- --- --- --- --- --- --G --- --- --- --- --- --- --- G-- -A- --- --- ... ... --- -G- --- --- --- --- --- --- --- -A- --- T-- ---
MX196 --- --- --T --- --- --- --- --- --G --- --- --- --- --- --- --- C-- --- --- --C ... ... --- -C- --- --- --- --- --C --- --- G-- --- --- ---
MX207 --T --- --- --- --- --- --- --C --G --- --- --- --- --- --- --- --- --C --- --- ... ... --- --- -C --- --- --- --- --- --- GT- --- --- ---
MX207_2 --- --- --- --- --- --- --- --C --G --- --- --- --- --- --- --- --- --- --- --- ... ... --- --- --- --- --- --- --- --- --- GT- --- --- ---
MX230 --- --- -GA --- --- --C --- --- --G --- --- --- --- A-- --- C-- --- G-- --- --- ... ... --- -C- --- --- --- --A --- --- --- -G- --- --- ---
MX313 --- --- --- --- --- -A- --- T-- --G --- --- --- --- A-- --- --- --- --- --- --- ... ... --- -C- --A --- --- C-- --- --- --- -A- --- --- ---
MX324 --- --- --T --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- -A- --- --G ... ... -G- --- --- --- --- --- --- --- -A- --- --- ---
MX327 --- --- -G- --- --- --- --- --- --G --- --- --- --- --- --- --- --- -A- --- --- ... ... -G- --- --- --- --- --- --- --- -A- --- T-- ---
MX350 --- --- --- --- --- --- --- --- --G --- --- --- --- --- --- --- --- --- --- --- ... ... --- --- --- --- --- --- --- --- --- --- --- ---
MX350_2 --- --- --- --- --- --- --- T-- --G --- --- --- --- T-G --- --- --- --- --- --- ... ... -G- --- --- --- --- C-A --- --- --C -G- --- --- ---
MX350_3 --- --- --- --- --- --- --- T-- --G --- --- --- --- T-G --- --- M-- --- --- -M- ... ... -G- --- --- --- --- C-A --- --- --C -G- --- --- ---
MX351 --- --- --- --- --- --- --- T-- --G --- --- --- --- T-G --- --- --- --- --- --- ... ... -G- --- --- --- --- C-A --- --- --C -G- --- --- ---
MX354 --- --- --- --- --- --- --- --- --G --- --- --- --- --- --- --- --G --- -A- --- --- ... ... T-- --- --- --- --- --- --- --- A-- GT- --- --- ---
MX355 --- --- --- --- --- --- --- T-- --G --- --- --- --- --- A-- --- --- --- -A- --- --- ... ... -G- -G- --- --- --- C-- --- --- --- -A- --- --- --T
MX370 --- --- -G- --- --- --- --- --- --G --T --- --- --G --- --- --- --- --- --- --- ... ... -C- --- --- --- --- --- --- --- --C --C -A- --- --- ---
MX375 --- --- -G- --- --- --- --- --- --G --- --- --- --- --- --- --- CAT --- --- --- ... ... G-- --- --- --- --- --A --- --- --- --- --- --- ---
MX376 --- --- -G- --A --- --- --- --- --G --- --- --- T-- T-- -T- --- G-- --- --- --- ... ... -G- --- --- --- --- --- --- --- --- -AA --- --- ---
MX381 --- --- --T --- --- --G --- --- --- --- --- --- --- --- --- --- --- --- --- --- ... ... -G- --- --- --- --G --- --- --- --C G-- --- --A ---
MX381_2 --- --- --- --- --- --- --- --C --G --- --- --- --- --- --- --- --- --- --- --- ... ... --- --- --- --- --- --- --- --- --- GT- --- --- ---
MX385 --- --- --- --- --- -A- --C --- --G --- C-- --- --- --- --- --C --- --- --- --- ... ... -G- --- --- --C --- --- --- --- A-- -A- --- --- ---
MX385_2 --- --- --- --- --- -A- --C --- --G --- --- --- --- --- --- --- --- --- --- --- ... ... -G- --- --- --- --- --- --- --C A-- -A- --- --- ---
MX390 --- --C --T --- --- --- --- --- --G --- --- --- --- -T- --- G-- --- --- --- --- ... ... --- -G- --- --- --- --- --C --- --- -A- --- T-- ---
MX399 --- --- -GA --- --- --G --- --- --G --- --- --- T-- T-- --- --- G-- --- A-- --- ... ... --- -GG --- --- --- --- --- --- --- -AA --- --A ---
MX399_2 --- --- -GA --- --- --G --- --- --G --- --- --- T-- T-- --- --- G-- --- A-- --- ... ... --- -GG --- --- --- --- --- --- --- -AA --- --A ---
MX401 --- --- --T --- --- --- --- --- --- --- --- --- --- --- --- --- --- -C- --- --- --- ... ... C-- -G- --- --- --- --- --- --- --C --A --- --A ---
MX403 --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- -C- --- --- --- ... ... C-- -G- --- --- --- --- --- --- --C --- --- --A ---
MX409 --- --- -GA --- --- --- --- --- --- --- --- --- --- T-- R-- --- C-G CAT --- --- --R ... ... --R G-- --- --- --- --- --A --- --- --- GT- --- --- ---
MX450 --- --- --T --- --- --- --- --- --G --- --- --- --- AT- --- --- -G- -A- --- --- ... ... --- -C- --- --- --- --- --- --- --- GT- --- --A ---
MX463 --- --- --A --- --- --- --- --- --G --- --- --- --- --- --- --- --- -A- --- --- ... ... -G- --- --- --- --- --- --- --- --A --G --A ---
MX464 --- --- --T --- --- A-- --- --- --G --- --- --- --- A-- --- --- --- G-- -A- -G- ... ... --- -A- --A --- --- --- --- --- A-- -A- --- --- ---
MX469 --- --- --- --- --- --- --G --- --G --- --- --- --C A-- --- --- --- --- --- --- ... ... --- GG- -G- --- --- C-- --- --- --- G-- --- --- ---
MX470 --- --- --T --- --- --G --- --- --G --- --- --- --- --- --- --G --- -A- --- --- ... ... C-- -G- --A --- --G --- --- --- -A- --G --- ---
MX473 --- --- -G- --- --- --- --C --- --G --Y --- --- --- A-- --- --- G-- --- --- --- ... ... -R- -G- --- --- --- --- --- --- --- G-- --- --- ---
MX474 --- --- --A --- --- --G --- --- --G --- --- --- --- -T- --- A-- --- G-- --- -G- ... ... C-- -G- --- --- --- --A --A --- --- -A- --- --A ---
MX540 --- --- --A --- --- --- --- --- --G --- --- --- --- --- --- --- --- G-- --- --- ... ... --- -G- --- --- --- --- C-- --C --- --- --A --- --- ---
MX542 --- --- --- C-- --- --- --C --- --G Y-- --- --- T-- --T --- --- --- --- --- AGA AGA --- -G- --- --- --- C-- --- --- --- -A- --- --- ---
MX546 --- --- --- --- C-- --- --A --- --G --Y --- --- --- A-- R-- --- --- --- GY- --- --- ... ... --- -G- --- --- --- --- --- --- --- G-- --- --- ---
MX554 --- --- -G- --- --- --- --- --- --G --- --- --- --- --- --- C-- CAT --- --- --- ... ... -G- G-- --- --- --- --A --- --- --G GG- --- --- ---
Consensus_D --- --- --- --- --- --- --- T-- --G --T --- --- --- A-- --- --- --- --- --- --- ... ... --- --- --A --- --- --- --- --- --- -G- --G --A ---
MX141 --- --- --- --- --- --- --- --- --G -C- --- --- --- A-- --- --- -G- -A- --- CC- ... ... --- --- --- --- --- --- --- --- --- --- -A- ---
MX210 --- --- --- --- --- --- --- --- --G --- --- --- --- A-- --- --- --- --- --- --- ... ... --- -C- --- --- --- --- --- --- --C --- G-A --- --A ---
MX352 --- --- --- --- --- --- --- --- --G --- --- --- T-- --- --- C-- --G -A- --- C-- ... ... --- -G- --- --- --- --- --- --- --- --- -G- --- --A ---
MX395 -C- --- --- --- --- --- --- --- --G --- --- --- T-- --- --- C-- --G -A- --- C-- ... ... --- -G- --- --- --- --- --- --- --- -G- --- --- ---
MX396 --- --- --- --- --- --- --- --- --G --- --- --- T-- --- --- C-- --G -A- --- C-- ... ... --- -G- --- --- --- --- --- --- --- -A- --- --- ---
Consensus_A --- --- --- --- --- --- --- --- --- --T --- --- --G AA- --- --- G-- --- --- -C- ... ... --- --- --- --- --- --- --- --- -G- --- T-A G--
Consensus_G --- --- --T --- --- --- --- --- --- --T --- --- --G AA- --- --- G-- --- --- -C- ... ... -G- -C- -G- --- --- --- --- --- --- -G- --- T-A ---
MX384 --- --- --T --- --- --- --- T-- --- --T C-- T-- --- -TG --- --- G-- --T --- --- ... ... --- -C- --- --- --- --A --- --- --- -G- --- T-A ---
MX384_2 --- --- --T --- --- --- --- T-- --- --T C-A T-- --- -TG --- --- G-- --T --- --- ... ... --- -C- --- --- --- --A --- --- --- -G- --- T-A ---
MX384_3 --- --- --T --- --- --- --- T-- --- --T C-A T-- --- -TG --- --R G-- --T --- --- ... ... --- -C- --- --- --- --A --- --- --- -G- --- T-A ---

```
                171                                180                                    190         193
                |                                  |                                      |           |
                E   D   R   W   N   K   P   Q   K   T   K   G   H   R   G   S   H   T   M   N   G   H   X
HXB2 REFERENCE GAG GAT AGA TGG AAC AAG CCC CAG AAG ACC AAG GGC CAC AGA GGG AGC CAC ACA ATG AAT GGA CAC TAG
MX033          --- --- C-- --- --- --- --- --- GT- --- --- --- -G- --- --- -A- --T --- --- --- --G --T ---
MX050          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --G -C- ---
MX066          --- --- --- --- --- -G- --- --- --- --- --- --- -G- --- --- --- --T --- --- --- --T --- ---
MX071          --- --- --- --- --- --- --- --- -G- --- --- --- --- --- -A- --- --T --- --- --- --- --- ---
MX071_2        --- --- --- --- --- --- --- --- -G- --- --- --- --- --- -A- --- --T --- --- --- T-T -C- ---
MX077          --- --- --- --- --- --- --- --- --- --- --- --- --- C-- --- --- --- --- --- --- --- --- ---
MX078          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --- --- ---
MX081          --- --- --- --- --- --- --- --- --A C-- --- -A- --- CA- --- ... ... --- --- --- --- --- ---
MX086          --A --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --- --T ---
MX089          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T T-- --- --- --- --A ---
MX091          --- --- --- --- --- --C --- --- --- --- --- --- --- --- -A- -T- --T --G C-- --- --- --G ---
MX101          --- --- --- --- -C- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --T --- ---
MX109          --- --- --- --- --- --- T-- --- --- --- --- --- --- --- --- --- --T --- --- --- --- --- ---
MX110          --A --- --- --- --- --- --- --- G-- --- --- --- --- --- --- --- --T --- --- --- --- --T ---
MX110_2        --A --- -A- --- --- --- --- --- G-- --- --- --- --- --- --- --- --T --- --- --- --- --T ---
MX111          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --- --- ---
MX112          --- --- --- --- --- G-- --- --- --- --- --- --- -G- --- --- --- --- --- --- --- --C --- ---
MX118          --- --- --- --- --- --- --- --- -G- --- --- --- --- --- --- -A- --T --- --- --- --C --- ---
MX119          --- --- --- --- --- --- --- --- --- --- --- --- --- --- -A- --- --T --- --- --- --- --- ---
MX122          --- --- --- --- -T- C-- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --- --- ---
MX123          --- --- --- --- --- --- --- --- --- --- -G- --- --- --- --- --- --T --- --- --- --C --- ---
MX125          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --G --- ---
MX131          --- --- --- --- C-- --- --- --- --- --- --- --- --- -A- --- --- --T --- --- --- --- --- ---
MX133          --- --- --- --- --- --- --- --- --- -T- --- --- --- --- --- --- --A --- --- --- --C --- ---
MX158          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --- --- ---
MX160          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T T-- --- --- --- --- ---
MX166          --- --- --- --- --- --- --- --- --A G-- --- --- --- --- --- -A- --T --- --- --- --- --- ---
MX168          --A --- --C --- --- --- --- --- G-- G-- -G- -T- --- C-- --- --- --T --- --- --- --- --- ---
MX172          --- --- --- --- --- TTA --- --- --- --- --- --- --- --- --- --- --T --- --- --- --T --- ---
MX176          --- --- --- --- --- --- --- --- --- C-- --- --- --- -A- --- --T --T --C --- --- --- --- ---
MX186          --- --- --- --- --- --T --- --- --- --- --- --- --- --- --- --- --T -G- --- --- --- -T- ---
MX190          --- --- --- --- --- --- --- --- --- --- --- -A- --- --- --- --- --T --- --- G-- --- --T ---
MX196          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- G-- --- --- --- ---
MX207          --- --- --- -C- --- --- --- --- GG- --- --- --- -G- --- --- --- --T --- --- --- --- --- ---
MX207_2        --- --- --- --- --- --- -A- --- GG- --- --- --- -G- --- --- --- --T --- --- --- --- --- ---
MX230          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --- --- ---
MX313          --- --- --- --- --- --- --- --- --- --- --- -A- --- --- --- --- --T *** *** *** *** *** ***
MX324          --- --- --- --- --- --- --- --- -G- --- --- --- --- --- --- --- --T --- --- --- --- TG- ---
MX327          --- --- --- --- --- --A --- --- --- --- --- -A- --- --- --- --- --T --- --- -G- --- --T ---
MX350          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
MX350_2        --- --- --- --- --- --- --- --- --- --- -C- --- --- -A- --- -A- --T --- --- --- --- --- ---
MX350_3        --- --- --- --- --- --- --- --- --- --- -C- --- --- -A- --- -A- --T --- --- --- --- --- ---
MX351          --- --- --- --- C-- --- --- --- --- --- -C- --- --- -A- --- -A- --T --- --- --- --- --- ---
MX354          --- --- --- --- --A G-- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
MX355          --- --- --- --- --- --- --- --- --- --- --- --- --- --- -A- --- --T --- --- --- --- --A ---
MX370          --- --- --- --- --- --- --- --- -G- -T- --- --- --- --- --- --- --T --- --- C-- --- --- ---
MX375          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- -A- --T --- --- --- --- --- ---
MX376          --A --- --- --- --- --- --- --- --- --- -CA --- --- C-- A-- --- --T T-- --T -T- --T --- ---
MX381          --- --- --- --- --- --- --- --- --- C-- --- --- --- --- -A- --- --T --- --- --- --G --- ---
MX381_2        --- --- --- --- --- --- -A- --- GG- --- --- --- -G- --- --- --- --T --- --- --- --- --- ---
MX385          --- --- --- --- --- --- --- --- CG- --- --- --- --- --- --- --- --T --- --- --- --G --- ---
MX385_2        --- --- --- --- --- --- --- --- -G- --- --- --- --- --- --- --- --T --- --- --- --G --- ---
MX390          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- -A- -GT --- --- --- --- --- ---
MX399          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T T-- --- --- --- --- ---
MX399_2        --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T T-- --- --- --- --- ---
MX401          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --- --- ---
MX403          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --T --- ---
MX409          --- --- --- --- --- G-- --- --- --- --- --- --- --- --- --- -A- --T --- --- --- --- --- ---
MX450          --- --- --- --- --- G-- --- --- --- --- --- --- -G- --- --- --- --- --- --- --- --- --- ---
MX463          --- --- --- --- --- --- --- --- --A --- --- --- --- --- --- -A- --T --- --- --- --- --- ---
MX464          --- --- --- --- -C- T-- --- --- --- --- -T- --- --- --- -A- --- --T --- --- -C- C-C --- ---
MX469          --- --C --- --- --- --- --- --- --- --- --- --- --- --- --- -A- --T -T- --- --- --- -T- ---
MX470          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T *** *** *** *** *** ***
MX473          --- --- --- --- --- --- --- --- --- --- G-- --- --- --- --- --- --T -T- --- --- --G --- ---
MX474          --A --- --- --- --- --C --- -G- --- --- -T- --- --- --- --- --- --T --- --- -G- --- --- ---
MX540          --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --- --- ---
MX542          --- --- --- --- --- --- --- --- --A --- --- --- --- --- --- --- --T --- --- --- --- --- ---
MX546          --- --- --- --- --- --- --- --- --A --- --- --- A-- --- -A- --- --T -T- --- --- --- --- ---
MX554          --- --- --- --- --- --- --- -G- --- --- --- --- --- --- --- -A- --Y --- --- --- --- --- ---
Consensus_D    --A --- --- --- --- --- --- --- -G- --- --- --- --- --- --- --- --T --- --- --- --- --T ---
MX141          --A --- --- --- --- --- --- --- --- --- --- --- --- --- -A- --- --T --- --- --- --- --- ---
MX210          --A --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
MX352          --A --- --- --- --- --- --- --- --- --- -G- --- --- --- --- --- --T --- --- --- --- --- ---
MX395          --A --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --- -G- ---
MX396          --A --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --T --- --- --- --- --- ---
Consensus_A    --- --C --- --- --- --- --- --- --- --- -G- --- --- --- --- --- --T --- --- --- --- --T ---
Consensus_G    --A --- --- --- --- --- --- --- --- --- -G- --- --- --- -A- -A- -CT --- --- --- --G --T ---
MX384          --- --C --- --- --- --- --- --- --- --- --- --- -G- --- -A- --- --T T-- --- --- --- --A ---
MX384_2        --- --C --- --- --- --- --- --- --- --- --- --- --- --- -A- -A- --T T-- --- --- --G --A ---
MX384_3        --- --C --- --- --- --- --- --- --- --- --- --- --- --- -A- RA- --T T-- --- --- --G --A ---
```

Key to annotations

The following Vif protein motifs descriptions are based on criteria established by Bell *et al*, 2007.

- Tryptophans (W^{5}, W^{11}, W^{21},W^{38} & W^{79}) involved in APOBEC3G recognition and suppression are shown in cyan highlight).
- APOBEC3 binding motifs are shown in dark blue highlight; the C-terminal APOBEC3F-binding motif (^{171}EDRWN^{175}) is not highlighted for simplicity.
- The ^{88}EW^{89} motif located in central hydrophilic region known to be involved in enhancing steady state expression is shown in yellow highlight and red font.
- The nuclear localization inhibitory signal (^{90}RLRR^{93}) is shown in red highlight. Sequences not having the consensus RLRR motif but having residues with conservative physicochemical properties are also shown in highlight.
- The ^{95}ST^{96} CKII and p44/42 Mitogen-Activated Protein Kinase (MAPK) phosphorylation sites are shown in magenta highlighting. Residues other than ST that can also be phosphorylated are aslo shown in highlight.
- In any case, clinical isolate or subtype consensus sequences not having the aforementioned functional sites or motifs are shown without highlight in the corresponding region (i.e. W^{11} which in MX071_2 is represented by an R^{11}).
- The zinc-binding motif ($H^{108}C^{114}C^{133}H^{139}$) is shown in black highlight and white font.
- Viral BC Box (^{144}SLQYLALAALITPK..K^{158}) is shown in green highlight and based on the criteria suggested by Bizinoto *et al*, 2013.
- The protease processing site (L^{150}) is also shown in black highlight.
- Threonine phosphorylation sites (T^{155} and T^{170}) are shown in yellow highlight.
- The Cullin-binding box (^{159}KPPLPSVTKLTEDR^{173}) is shown in grey highlight.

References

Molecular characterization of the HIV type 1 subtype C accessory genes vif, vpr, and vpu. Bell CM, Connell BJ, Capovilla A, Venter WD, Stevens WS, Papathanasopoulos MA. AIDS Res Hum Retroviruses. 2007 Feb;23(2):322-30.

Codon pairs of the HIV-1 vif gene correlate with CD4+ T cell count. Bizinoto MC, Yabe S, Leal É, Kishino H, Martins Lde O, de Lima ML, Morais ER, Diaz RS, Janini LM. BMC Infect Dis. 2013 Apr 11;13:173.