Table 12: **Nef** 

|                |  | 2  |   | 2  |                          |
|----------------|--|--|---|--|--------------------------|
| Location       | WEAU   | Sequence   | Immunogen   | Species(HLA)   | References               |
| Nef(1-20 LAI)  | Nef(1-20)  | MGGKWSKSSVVGWPTVRERM   | Nef, Rev and Tat<br>DNA immunization                  | $murine(H-2^d)$  | [Hinkula et al.(1997)]   |
|                | NOTES: • Stronger, brocular protein                  | TES: Stronger, broader responses were observed in animals vaccinated with DNA epidermally rather than with intramuscular protein   | nals vaccinated with DN/                              | vepidermally rather than   | with intramus-           |
| Nef(16–35 LAI) | Nef(16–35)   | (16–35) VRERMRRAEPAADGVGAASR Nef, Rev and Tat muri   | Nef, Rev and Tat  DNA immunization                    | murine(H- $2^d$ )  | [Hinkula et al.(1997)]   |
|                | NOTES:  • Stronger, brocular protein  • Some prolife | TES:  Stronger, broader responses were observed in animals vaccinated with DNA epide cular protein  Some proliferative response to vaccination was observed to peptides throughout N   | nals vaccinated with DN/                              | \ epidermally rather than with intramus-<br>hout Nef and Tat, less for Rev | with intramus-           |
| Nef(31–50 LAI) | Nef(31–50)   | GAASRDLEKHGAITSSNTAA   | Nef, Rev and Tat DNA immunization                     | $murine(H-2^d)$  | [Hinkula et al.(1997)]   |
|                | NOTES:  • Stronger, brocular protein  • Some prolife | <b>TES:</b> Stronger, broader responses were observed in animals vaccinated with DNA epidermally rather than with cular protein Some proliferative response to vaccination was observed to peptides throughout Nef and Tat, less for Rev | nals vaccinated with DN/<br>served to peptides throug | \ epidermally rather than with intramus-<br>hout Nef and Tat, less for Rev | with intramus-           |
| Nef(45–69 BRU) | Nef(45-67)   | SSNTAATNAACAWLEAQ-<br>EEEEVGFP   | rec Nef   | rat and chimpanzee   | [Estaquier et al.(1992)] |
|                | NOTES:  • Antigenic nization                         | <b>TES:</b> Antigenic domain: ATNAACAWL, priming with peptide enhanced subsequent Ab response to Nef protein immunization  | peptide enhanced subseq                               | uent Ab response to Nef  | protein immu-            |
| Nef(46–65 LAI) | Nef(46–65)   | SNTAATNAACAWLEAQEEEE   | Nef, Rev and Tat<br>DNA immunization                  | $murine(H-2^d)$  | [Hinkula et al.(1997)]   |
|                | NOTES: • Stronger, bro                               | <b>TES:</b> Stronger, broader responses were observed in animals vaccinated with DNA epider cular protein  | nals vaccinated with DN/                              | \ epidermally rather than with intramus-                                   | with intramus-           |
|                | Some pro   | Some proliferative response to vaccination was observed to peptides throughout No  | served to peptides throug                             | hout Nef and Tat, less for Rev   | Rev                      |

## HIV Helper-T Cell Epitopes

| Location         | WEAU   | Sequence  | Immunogen  | Species(HLA)   | References                             |
|------------------|--|---|--|--|--|
| Nef(61–80 LAI)   | Nef(59–78)   | QEEEEVGFPVTPQVPLRPMT  | Nef, Rev and Tat<br>DNA immunization                 | $murine(H-2^b)$                                      | [Hinkula et al.(1997)]                 |
|                  | NOTES:  • Stronger, brocular protein  • Some prolife | TES: Stronger, broader responses were observed in animals vaccinated with DNA epidermally rather than with intramuscular protein Some proliferative response to vaccination was observed to peptides throughout Nef and Tat. less for Rev | als vaccinated with DNA<br>erved to peptides through | epidermally rather than                              | with intramus-                         |
| Nef(76–95 LAI)   | Nef(74–93)   | LRPMTYKAAVDLSHFLKEKG  | Nef, Rev and Tat DNA immunization                    | $murine(H-2^b)$                                      | [Hinkula et al.(1997)]                 |
|                  | NOTES: • Stronger, brocular protein • Some prolife   | TES: Stronger, broader responses were observed in animals vaccinated with DNA epidermally rather than with intramuscular protein Some proliferative response to vaccination was observed to peptides throughout Nef and Tat, less for Rev | als vaccinated with DNA<br>erved to peptides through | epidermally rather than<br>out Nef and Tat, less for | with intramus-                         |
| Nef(98–112 BRU)  | Nef(96–110) NOTES: • Peptide alor                    | ef(96–110) EGLIHSQRRQDILDL rec Nef chimpanzee [Estatories]  OTES:  Peptide alone could stimulate monkey T-cells in the absence of carrier protein – required carrier protein in rat   | rec Nef absence of carrier protei                    | chimpanzee<br>in – required carrier prot             | [Estaquier et al.(1992)]<br>ein in rat |
| Nef(91-110 LAI)  | Nef(89–108)  | LKEKGGLEGLIHSQRRQDIL  | Nef, Rev and Tat<br>DNA immunization                 | $murine(H-2^b)$                                      | [Hinkula et al.(1997)]                 |
|                  | NOTES:  • Stronger, brocular protein • Some prolife  | TES: Stronger, broader responses were observed in animals vaccinated with DNA epidermally rather than with intramuscular protein Some proliferative response to vaccination was observed to peptides throughout Nef and Tat, less for Rev | als vaccinated with DNA<br>erved to peptides through | epidermally rather than tout Nef and Tat, less for   | with intramus- · Rev                   |
| Nef(106–125 LAI) | Nef(104–123)   | RQDILDLWIYHTQGYFPDWQ  | Nef, Rev and Tat<br>DNA immunization                 | $murine(H-2^b)$                                      | [Hinkula et al.(1997)]                 |
|                  | NOTES: • Stronger, brotein                           | TES:<br>Stronger, broader responses were observed in animals vaccinated with DNA epidermally ratherthan with intramuscular<br>protein   | s vaccinated with DNA ep                             | idermally ratherthan wit                             | hintramuscular                         |
|                  | Some prolit  | Some proliferative response to vaccination was observed to peptides throughout Nef and Tat, less for Rev  | erved to peptides through                            | out Nef and Tat, less for                            | Rev                                    |

| Location         | WEAU  | Sequence   | Immunogen  | Species(HLA)   | References             |
|------------------|---|--|--|--|------------------------|
| Nef(121–140 LAI) | Nef(119–138)  | FPDWQNYTPGPGVRYPLTFG   | Nef, Rev and Tat<br>DNA immunization                   | $murine(H-2^b)$  | [Hinkula et al.(1997)] |
|                  | <ul><li>Stronger, brocular protein</li><li>Some prolife</li></ul> | Stronger, broader responses were observed in animals vaccinated with DNA epidermally rather than with intramuscular protein  Some proliferative response to vaccination was observed to peptides throughout Nef and Tat, less for Rev            | nals vaccinated with DNA served to peptides through    | epidermally rather than with<br>nout Nef and Tat, less for Rev | with intramus-<br>Rev  |
| Nef(136–155 LAI) | Nef(134–153)  | PLTFGWCYKLVPVEPDKVEE   | Nef, Rev and Tat<br>DNA immunization                   | $murine(H-2^d)$  | [Hinkula et al.(1997)] |
|                  | <ul><li>Stronger, brocular protein</li><li>Some prolife</li></ul> | <b>1E5:</b> Stronger, broader responses were observed in animals vaccinated with DNA epidermally rather than with intramuscular protein Some proliferative response to vaccination was observed to peptides throughout Nef and Tat, less for Rev | nals vaccinated with DNA served to peptides through    | epidermally rather than with<br>nout Nef and Tat, less for Rev | with intramus-         |
| Nef(151–170 LAI) | Nef(149–168)  | DKVEEANKGENTSLLHPVSL   | Nef, Rev and Tat<br>DNA immunization                   | $murine(H-2^d)$  | [Hinkula et al.(1997)] |
|                  | NOTES:  • Stronger, brocular protein  • Some prolife              | STES: Stronger, broader responses were observed in animals vaccinated with DNA epidermally rather than with intramuscular protein Some proliferative response to vaccination was observed to peptides throughout Nef and Tat, less for Rev       | nals vaccinated with DNA<br>served to peptides through | epidermally rather than nout Nef and Tat, less for             | with intramus-         |
| Nef(166–185 LAI) | Nef(164–183)  | HPVSLHGMDDPEREVLEWRF   | Nef, Rev and Tat<br>DNA immunization                   | $murine(H-2^{b,d})$  | [Hinkula et al.(1997)] |
|                  | NOTES: • Stronger, brocular protein • Some prolife                | TES: Stronger, broader responses were observed in animals vaccinated with DNA epidermally rather than with intramuscular protein Some proliferative response to vaccination was observed to peptides throughout Nef and Tat, less for Rev        | nals vaccinated with DNA<br>served to peptides through | epidermally rather than with<br>nout Nef and Tat, less for Rev | with intramus-<br>Rev  |
| Nef(181–205 LAI) | Nef(179–203) <b>NOTES:</b>  | LEWRFDSRLAFHHVARE-<br>LHPEYFKN   | Nef, Rev and Tat<br>DNA immunization                   | $murine(H-2^d)$  | [Hinkula et al.(1997)] |
|                  | <ul><li>Stronger, brocular protein</li><li>Some prolife</li></ul> | Stronger, broader responses were observed in animals vaccinated with DNA epidermally rather than with intramuscular protein  Some proliferative response to vaccination was observed to peptides throughout Nef and Tat, less for Rev            | nals vaccinated with DNA served to peptides through    | epidermally rather than nout Nef and Tat, less for             | with intramus-         |
| Nef(183–198)     | Nef(183–198) NOTES: • T-cell respo                                | (183–198) FDSRLAFHHVARELHP? HIV.  T-cell response to this epitope persisted after seroreversion  | HIV-1 infection eversion                               | human  | [Ranki et al.(1997)]   |
|                  |   |  |  |  |                        |