**Supplementary Table 4 – HLA class II-specific core epitopes**

|  |  |  |  |
| --- | --- | --- | --- |
| **HLA** | **Antigen *(Gene)*** | **Position of core** | **Sequence** |
| DQ2 | INS *(Ins)* | 78-86 | []QPLALEGSL[] |
|  |  | 80-86 | []LALEGSL[] |
| DQ2 trans | INS *(Ins)* | 79-87 | [SLQ]PLALEGSLQ |
|  |  | 80-86 | []LALEGSL[] |
| DQ5 | GAD65 *(GAD2)* | 500-508 | [YEMVFDGKP]QHTNVCFWY[IP] |
| DQ6 | INS *(INS)* | 7-15 | [MALWMR]LLPLLALLA[LWGPDPAAA] |
|  |  | 22-30 | [LALWGPDP]AAAFVNQHL[CGS] |
|  |  | 37-45 | [HLV]EALYLVCGE[RGFFYTPK] |
|  |  | 50-58 | [GERGFF]YTPKTRREA[EDLQV] |
|  |  | 73-81 | [GQVELGGGP]GAGSLQPLA[LE] |
|  |  | 81-89 | [AGSLQPL]ALEGSLQKR[GIVE] |
|  |  | 97-105 | [QCC]TSICSLYQL[ENYCN] |
| DQ8 | CHGA *(CHGA)* | 347-355 | [WSKMD]QLAKELTAE[] |
|  | GAD65 *(GAD2)* | 126-134 | [YVVKS]FDRSTKVID[FHYPNE] |
|  |  | 207-215 | [NTNMFT]YEIAPVFVL[LEYVT] |
|  |  | 236-244 | [PGGSG]DGIFSPGGA[ISNMYA] |
|  |  | 253-261 | [AMM]IARFKMFPE[VKEKG] |
|  |  | 264-272 | [EVK]EKGMAALPR[LIAFTSEH] |
|  |  | 477-485 | [VDKCLE]LAEYLYNII[KNREG] |
|  |  | 510-518 | [CFWYI]PPSLRTLED[N] |
|  |  | 525-533 | [ERMS]RLSKVAPVI[KA] |
|  |  | 540-548 | [RMME]YGTTMVSYQ[PL] |
|  | IA-2 *(PTPRN)* | 202-210 | [SLSY]EPALL(Q🡪E)PYL[FH(Q🡪E)FGS] |
|  |  | 470-478 | [AAE]EYGYIVTD(Q🡪E)[KPLS] |
|  |  | 525-533 | [QN]LSLADVT(Q🡪E)(Q🡪E)[AGL] |
|  |  | 551-559 | [TGL(Q🡪E)IL](Q🡪E)TGVG(Q🡪E)REE[AAA] |
|  |  | 610-618 | [RQHARQQDK]ERLAALGPE |
|  |  | 622-630 | [GPEGAH]GDTTFEYQD[LCR] |
|  |  | 653-661 | [EGPPEPS]RVSSVSSQF[SD] |
|  |  | 664-672 | [FSD]AAQASPSSH[SSTPSW] |
|  |  | 724-732 | [AEP]NTCATAQGE[GNIKKN] |
|  |  | 774-782 | [NASPIIEH]DPRMPAYIA[T] |
|  |  | 834-842 | [DEGASLYH]VYEVNLVSE[H] |
|  |  | 935-943 | [KGVK]EIDIAATLE[HVRDQ] |
|  |  | 965-973 | [FALT]AVAEEVNAI[LKALPQ] |
|  | IAPP *(IAPP)* | 74-82 | [VGSNTYGK(R🡪Cit)]NAVEVLK(R🡪Cit)E[PL] |
|  | INS *(INS)* | 3-11 | [MA]LWMRLLPLL[ALLALWGPDPAAA] |
|  |  | 12-20 | [LPLL]ALLALWGPD[PAA] |
|  |  | 21-29 | [LALWGPD]PAAAFVNQH[LCGSHL] |
|  |  | 29-37 | [FVNQ]HLCGSHLVE[ALY] |
|  |  | 37-45 | [LCGSHLV]EALYLVCGE[RGFFYTPK] |
|  |  | 40-48 | YLVCGERGF[FYTPKTR] |
|  |  | 53-61 | [GERGFFYTP]KTRREAEDL[QV] |
|  |  | 57-65 | [RR]EAEDLQVGQ[VELGG] |
|  |  | 59-67 | [A]EDLQVGQVE |
|  |  | 65-73 | [LQVG]QVELGGGPG[AGS] |
|  |  | 66-74 | []VELGGGPGA[] |
|  |  | 74-82 | [GGPG]AGSLQPLAL[EGSLQKRGIVE] |
|  |  | 85-93 | [AGSLQPLALEG]SLQKRGIVE[QCCT] |
|  |  | 97-105 | [VEQCC]TSICSLYQL[ENYCN] |
|  | INS hybrid | C-pep:NP-Y | [G]QVELGGGSS[PETLI] |
| DQ8 trans | IA-2 *(PTPRN)* | 146-154 | [LQDI]PTGSAPAAQ[HRLPQ] |
|  | INS *(INS)* | 17-24 | []WGPDPAAA[] |
|  |  | 37-45 | [SHLV]EALYLVCGE[RG] |
|  |  | 74-82 | [PG]AGSLQPLAL[EGSLQKR] |
|  |  | 77-85 | [S]LQPLALEGS[L] |
| DR1 | GAD65 *(GAD2)* | 89-97 | [N]YAFLHATDL[LP] |
|  |  | 249-257 | [M]YAMMIARFK[MF] |
|  |  | 418-426 | [GLMQN]CNQMHASYL[FQQDK] |
|  |  | 506-514 | [HTNVC]FWYIPPSLR[TLEDNE] |
| DR3 | GAD65 *(GAD2)* | 252-260 | [NMYAM]MIARFKMFP[EVKEKG] |
|  |  | 340-348 | [TAGTT]VYGAFDPLL[AVAD] |
|  |  | 493-501 | [YE]MVFDGKPQH[TNVCFWYIP] |
|  |  | 515-523 | [PSLR]TLEDNEERM[SRLSKVA] |
|  | IA-2 *(PTPRN)* | 329-337 | [DRGEKPASPA]VQPDAALQR[LAAVL] |
|  |  | 474-482 | [SPLGQSQPTVAGQPSARPAAEEYGY]IVTDQKPLS[LAAGVK] |
|  | IGRP *(G6PC2)* | 15-23 | [QH]LQKDYRAYY[TF] |
|  |  | 228-236 | [RV]LNIDLLWSV[PI] |
|  | INS *(INS)* | 48-56 | FFYTPKTRR[EAED] |
|  | ZnT8 *(SLC30A8)* | 121-129 | [S]LWLSSKPPS[KRLTFGWHRAEILGALL] |
|  |  | 160-168 | [FGWHRAEILGALLSILCIWVVTGVLV]YLACERLLY[PDYQIQ] |
|  |  | 329-337 | [ASRDSQ]VVRREIAKA[LSKSFTMHSLTIQMESPVD] |
| DR0401 | DMK *(DMPK)* | 19-27 | [RLQQLVLDPG]FLGLEPLLD[L] |
|  | GAD65 *(GAD2)* | 8-16 | [MASPGSG]FWSFGSEDG[SGDS] |
|  |  | 80-88 | [CACDQKP]CSCSKVDVN[YAFL] |
|  |  | 91-99 | [YA]FLHATDLLP[ACDGE(R🡪Cit)PTL] |
|  |  | 110-108 | [RPTLA]FLQDVMNIL[LQYVVK] |
|  |  | 117-125 | [DVMN]ILLQYVVKS[FDRSTKV] |
|  |  | 117-125 | [MN]ILL(Q🡪E)YVVKS[FD] |
|  |  | 160-168 | [P(Q🡪E)NLEEI]LMHC(Q🡪E)TTLK[YAIK] |
|  |  | 176-184 | [GH]PRYFNQLST[G] |
|  |  | 205-213 | [NTNM]FTYEIAPVF[VLLEYVT] |
|  |  | 273-281 | [KGMAALPR]LIAFTSEHS[HFSLKK] |
|  |  | 273-281 | [KGMAALP(R🡪Cit)]LIAFTSEHS[HFS] |
|  |  | 276-284 | [LIA]FTSEHSHFS[LKKGAAAL] |
|  |  | 300-308 | [DSV]ILIKCDERG[KMIPSDLE] |
|  |  | 310-318 | [DERGK]MIPSDLERR[ILEAKQ] |
|  |  | 327-335 | [EAKQKG]FVPFLVSAT[AGTTV] |
|  |  | 360-368 | [KYKI]WMHVDAAWG[GG] |
|  |  | 379-387 | [KHK]WKLSGVERA[NSVTWNPHK] |
|  |  | 435-443 | [YD]LSYDTGDKA[LQCGRHVDV] |
|  |  | 482-490 | [KCLELAEYL]YNIIKNREG[YEMVF] |
|  |  | 513-521 | [PS]LRTLEDNEE[RMSR] |
|  |  | 556-564 | [VSYQPLGDKVN]FFRMVISNP |
|  |  | 549-557 | [SYQ]PLGDKVNFF[RMV] |
|  |  | 557-565 | [GDKVNF]FRMVISNPA[ATHQDIDFLI] |
|  |  | 557-565 | [KVNF]F(R🡪Cit)MVISNPA[ATHQDIDFLI] |
|  |  | 571-579 | [AATHQD]IDFLIEEIE[R] |
|  | GRP78 *(HSPA5)* | 198-206 | [VMR]IINEPTAAA[IAY] |
|  |  | 198-206 | [VM(R🡪Cit)]IINEPTAAA[IAY] |
|  |  | 501-509 | [EVT]FEIDVNGIL[RVT] |
|  |  | 501-509 | [EVT]FEIDVNGIL[(R🡪Cit)VTAE] |
|  | IA-2 *(PTPRN)* | 661-669 | [VSSQ]FSDAAQASP[SSHSS] |
|  |  | 719-727 | [LAKEWQALCA]YQAEPNTCA[TAQGEG] |
|  |  | 753-761 | [IK]LKVESSPSR[SDYINASPI] |
|  |  | 805-813 | [MVWESGCT]VIVMLTPLV[EDGV] |
|  |  | 856-864 | [FY]LKNVQTQET[RTLTQFHF] |
|  |  | 959-967 | [SKDQ]FEFALTAVA[EEVNAILK] |
|  | IGRP *(G6PC2)* | 22-30 | [KDYRA]YYTFLNFMS[NVGDPR] |
|  |  | 25-33 | [YT]FLNFMSNVG[DP] |
|  |  | 249-257 | [KWCANPDW]IHIDTTPFA[GLV] |
|  | INS *(INS)* | 17-25 | [LALLAL]WGPDPAAAF[V] |
|  |  | 25-33 | [PAAA]FVNQHLCGS[HLV] |
|  |  | 80-88 | [GGGPGAGSLQP]LALEGSLQK[RGIVEQ] |
|  |  | 77-85 | [S]LQPLALEGS[L] |
|  |  | 79-87 | [Q]PLALEGSLQ |
|  |  | 80-88 | []LALEGSLQK[] |
|  |  | 91-99 | [SLQKRG]IVEQCCTSI[CSLYQ] |
|  | S100 *(S100B)* | 9-17 | [KAM]VALIDVFHQ[YSGREGDK] |
|  |  | 28-36 | [REGDKHK]LKKSELKEL |
|  |  | 37-45 | [KHKLKKSELKEL]INNELSHFL[E] |
|  |  | 77-85 | [ECDFQEFMA]FVAMVTTAC[HEFFEHE] |
|  | ZnT8 *(SLC30A8)* | 272-280 | [S]ILLMEGVPK[SLN] |
| DR0404 | GAD65 *(GAD2)* | 253-261 | [M]IARFKMFPE[VKEKG] |
|  |  | 276-284 | []FTSEHSHFS[] |
|  |  | 557-565 | [NF]FRMVISNPA[AT] |
| DR12 | GAD65 *(GAD2)* | 253-261 | [MM]IARFKMFPE[VKEKGMAAL] |
| DR1601 | GAD65 *(GAD2)* | 156-164 | [NWELADQPQN]LEEILMHCQ[T] |
|  | INS *(INS)* | 39-47 | [LVEA]LYLVCGERG[FFYT] |
| DRB4 | GAD65 *(GAD2)* | 117-125 | [DVMN]ILLQYVVKS[FDRSTKV] |
|  |  | 219-227 | [IAPVFVLLEY]VTLKKMREI[I] |
|  |  | 273-281 | [LPR]LIAFTSEHS[HFS] |
|  |  | 358-367 | [ICKKY]KIWMHVDAA[WGGGLL] |
|  |  | 531-539 | [VA]PVIKARMME[YGTTMVSYQ] |
|  |  | 556-564 | [KVN]FFRMVISNP[AATHQDID] |
|  |  | 565-573 | [NP]AATHQDIDF[LI] |
|  |  | 571-579 | [ATHQD]IDFLIEEIE[RLGQDL] |
|  | INS *(INS)* | 14-22 | [PLLAL]LALWGPDPA[AAFVNQ] |
| DRB5 | GAD65 *(GAD2)* | 89-97 | [N]YAFLHATDL[LP] |
|  |  | 249-257 | [M]YAMMIARFK |
| DPw2 | GAD65 *(GAD2)* | 378-386 | [GGGLLMSRKH]KWKLSGVER[AN] |
| DP0401 | IA-2 *(PTPRN)* | 832-840 | [L]YHVYEVNLV[SEHIWCEDFL] |
|  |  | 850-858 | [SEHIWCEDF]LVRSFYLKN[VQ] |

To compile the HLA class II-specific core epitopes, entries from Table 2 were sorted based on HLA. Those with unknown or ambiguous HLA information were excluded. The IEDB epitope prediction tool (http://tools.iedb.org/mhcii/) was then utilized to define the most likely core nonamer for each epitope. All lines that shared the same HLA restriction and core nonamer were collapsed into a single line. For each core epitope, the flanking residues on either side that were cumulatively present on the various sides (if applicable) are shown in brackets.