

**Table S1.** LSA antigens and their eplet-predicted antigens.

LSA antigens	Eplet-predicted antigens	Eplet abbreviate of eplet-predicted antigens	Eplets of LSA antigens	Eplets of eplet-predicted antigens
A*01:01	A*01:01	A*01:01	44KM, 62QE, 65RNA, 76ANT, 79GT, 90D, 138MI, 144K, 144KR, 163R, 163RG, 166DG	44KM, 62QE, 65RNA, 76ANT, 79GT, 90D, 138MI, 144K, 144KR, 163R, 163RG, 166DG
A*02:01	A*02:01, A*02:02, A*02:05, A*02:06, A*02:07	A*02:01	62GE, 62GK, 79GT, 107W, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q	62GE, 62GK, 79GT, 107W, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q
A*02:02	A*02:01, A*02:02, A*02:05, A*02:06, A*02:07	A*02:02	62GE, 62GK, 79GT, 107W, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q	62GE, 62GK, 79GT, 107W, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q
A*02:03	A*02:03	A*02:03	62GE, 62GK, 79GT, 107W, 127K, 144K, 144TKH, 149TAH, 253Q	62GE, 62GK, 79GT, 107W, 127K, 144K, 144TKH, 149TAH, 253Q
A*02:05	A*02:01, A*02:02, A*02:05, A*02:06, A*02:07	A*02:05	62GE, 62GK, 79GT, 107W, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q	62GE, 62GK, 79GT, 107W, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q
A*03:01	A*03:01, A*03:02	A*03:01	62QE, 65RNA, 79GT, 138MI, 144K, 144KR, 150AAH, 161D	62QE, 65RNA, 79GT, 138MI, 144K, 144KR, 150AAH, 161D
A*11:01	A*11:01, A*11:02	A*11:01	62QE, 65RNA, 79GT, 90D, 138MI, 144K, 144KR, 150AAH, 151AHA, 163R, 163RW	62QE, 65RNA, 79GT, 90D, 138MI, 144K, 144KR, 150AAH, 151AHA, 163R, 163RW
A*11:02	A*11:01, A*11:02	A*11:02	62QE, 65RNA, 79GT, 90D, 138MI, 144K, 144KR, 150AAH, 151AHA, 163R, 163RW	62QE, 65RNA, 79GT, 90D, 138MI, 144K, 144KR, 150AAH, 151AHA, 163R, 163RW
A*23:01	A*23:01	A*23:01	62EE, 65GK, 80I, 82LR, 127K, 138MI, 166DG	62EE, 65GK, 80I, 82LR, 127K, 138MI, 166DG
A*23:01	A*24:02, A*24:07	A*23:01 + 144K + 144KR + 150AAH	62EE, 65GK, 80I, 82LR, 127K, 138MI, 166DG	62EE, 65GK, 80I, 82LR, 127K, 138MI, 144K, 144KR, 150AAH, 166DG
A*24:02	A*24:02, A*24:07	A*24:02	62EE, 65GK, 80I, 82LR, 127K, 138MI, 144K, 144KR, 150AAH, 166DG	62EE, 65GK, 80I, 82LR, 127K, 138MI, 144K, 144KR, 150AAH, 166DG

A*24:03	A*24:02, A*24:07	A*24:03 + 166DG	62EE, 65GK, 80I, 82LR, 127K, 138MI, 144K, 144KR, 150AAH	62EE, 65GK, 80I, 82LR, 127K, 138MI, 144K, 144KR, 150AAH, 166DG
A*24:03	A*24:03	A*24:03	62EE, 65GK, 80I, 82LR, 127K, 138MI, 144K, 144KR, 150AAH	62EE, 65GK, 80I, 82LR, 127K, 138MI, 144K, 144KR, 150AAH
A*24:03	A*24:10	A*24:03 + 163R + 163RW	62EE, 65GK, 80I, 82LR, 127K, 138MI, 144K, 144KR, 150AAH	62EE, 65GK, 80I, 82LR, 127K, 138MI, 144K, 144KR, 150AAH, 163R, 163RW
A*25:01	A*25:01	A*25:01	62RR, 65RNA, 76ESI, 80I, 82LR, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q	62RR, 65RNA, 76ESI, 80I, 82LR, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q
A*26:01	A*26:01	A*26:01	62RR, 65RNA, 76ANT, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q	62RR, 65RNA, 76ANT, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q
A*29:01	A*29:01, A*29:02	A*29:01	62LQ, 65RNA, 76ANT, 79GT, 138MI, 253Q	62LQ, 65RNA, 76ANT, 79GT, 138MI, 253Q
A*29:01	A*43:01	A*29:01 + 90D + 145RT + 149TAH + 163R + 163RW	62LQ, 65RNA, 76ANT, 79GT, 138MI, 253Q	62LQ, 65RNA, 76ANT, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q
A*29:02	A*29:01, A*29:02	A*29:02	62LQ, 65RNA, 76ANT, 79GT, 138MI, 253Q	62LQ, 65RNA, 76ANT, 79GT, 138MI, 253Q
A*29:02	A*43:01	A*29:02 + 90D + 145RT + 149TAH + 163R + 163RW	62LQ, 65RNA, 76ANT, 79GT, 138MI, 253Q	62LQ, 65RNA, 76ANT, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q
A*30:01	A*30:01	A*30:01	56R, 62QE, 65RNA, 79GT, 138MI	56R, 62QE, 65RNA, 79GT, 138MI
A*30:01	A*30:04	A*30:01 + 76EG + 150AAH	56R, 62QE, 65RNA, 79GT, 138MI	56R, 62QE, 65RNA, 76EG, 79GT, 138MI, 150AAH
A*30:01	A*31:01	A*30:01 + 253Q	56R, 62QE, 65RNA, 79GT, 138MI	56R, 62QE, 65RNA, 79GT, 138MI, 253Q
A*31:01	A*31:01	A*31:01	56R, 62QE, 65RNA, 79GT, 138MI, 253Q	56R, 62QE, 65RNA, 79GT, 138MI, 253Q
A*32:01	A*32:01	A*32:01	62QE, 65RNA, 76ESI, 80I, 82LR, 138MI, 253Q	62QE, 65RNA, 76ESI, 80I, 82LR, 138MI, 253Q

A*33:01	A*26:01	A*33:01 + 76ANT + 90D + 145RT + 149TAH + 163R + 163RW	62RR, 65RNA, 79GT, 138MI, 253Q	62RR, 65RNA, 76ANT, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q
A*33:01	A*33:01, A*33:03	A*33:01	62RR, 65RNA, 79GT, 138MI, 253Q	62RR, 65RNA, 79GT, 138MI, 253Q
A*33:01	A*34:02	A*33:01 + 90D + 145RT + 149TAH	62RR, 65RNA, 79GT, 138MI, 253Q	62RR, 65RNA, 79GT, 90D, 138MI, 145RT, 149TAH, 253Q
A*33:01	A*66:01	A*33:01 + 90D + 145RT + 149TAH + 163R + 163RW	62RR, 65RNA, 79GT, 138MI, 253Q	62RR, 65RNA, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q
A*33:01	A*66:02	A*33:01 + 145RT + 149TAH + 163EW	62RR, 65RNA, 79GT, 138MI, 253Q	62RR, 65RNA, 79GT, 138MI, 145RT, 149TAH, 163EW, 253Q
A*33:03	A*26:01	A*33:03 + 76ANT + 90D + 145RT + 149TAH + 163R + 163RW	62RR, 65RNA, 79GT, 138MI, 253Q	62RR, 65RNA, 76ANT, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q
A*33:03	A*33:01, A*33:03	A*33:03	62RR, 65RNA, 79GT, 138MI, 253Q	62RR, 65RNA, 79GT, 138MI, 253Q
A*33:03	A*34:02	A*33:03 + 90D + 145RT + 149TAH	62RR, 65RNA, 79GT, 138MI, 253Q	62RR, 65RNA, 79GT, 90D, 138MI, 145RT, 149TAH, 253Q
A*33:03	A*66:01	A*33:03 + 90D + 145RT + 149TAH + 163R + 163RW	62RR, 65RNA, 79GT, 138MI, 253Q	62RR, 65RNA, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q
A*33:03	A*66:02	A*33:03 + 145RT + 149TAH + 163EW	62RR, 65RNA, 79GT, 138MI, 253Q	62RR, 65RNA, 79GT, 138MI, 145RT, 149TAH, 163EW, 253Q
A*34:02	A*26:01	A*34:02 + 76ANT + 163R + 163RW	62RR, 65RNA, 79GT, 90D, 138MI, 145RT, 149TAH, 253Q	62RR, 65RNA, 76ANT, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q
A*34:02	A*34:02	A*34:02	62RR, 65RNA, 79GT, 90D, 138MI, 145RT, 149TAH, 253Q	62RR, 65RNA, 79GT, 90D, 138MI, 145RT, 149TAH, 253Q
A*34:02	A*66:01	A*34:02 + 163R + 163RW	62RR, 65RNA, 79GT, 90D, 138MI, 145RT, 149TAH, 253Q	62RR, 65RNA, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q

A*36:01	A*01:01	A*36:01 + 163R + 163RG + 166DG	44KM, 62QE, 65RNA, 76ANT, 79GT, 90D, 138MI, 144K, 144KR	44KM, 62QE, 65RNA, 76ANT, 79GT, 90D, 138MI, 144K, 144KR, 163R, 163RG, 166DG
A*36:01	A*36:01	A*36:01	44KM, 62QE, 65RNA, 76ANT, 79GT, 90D, 138MI, 144K, 144KR	44KM, 62QE, 65RNA, 76ANT, 79GT, 90D, 138MI, 144K, 144KR
A*43:01	A*43:01	A*43:01	62LQ, 65RNA, 76ANT, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q	62LQ, 65RNA, 76ANT, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q
A*66:01	A*26:01	A*66:01 + 76ANT	62RR, 65RNA, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q	62RR, 65RNA, 76ANT, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q
A*66:01	A*66:01	A*66:01	62RR, 65RNA, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q	62RR, 65RNA, 79GT, 90D, 138MI, 145RT, 149TAH, 163R, 163RW, 253Q
A*66:02	A*66:02	A*66:02	62RR, 65RNA, 79GT, 138MI, 145RT, 149TAH, 163EW, 253Q	62RR, 65RNA, 79GT, 138MI, 145RT, 149TAH, 163EW, 253Q
A*68:01	A*68:01, A*68:02	A*68:01	62RR, 65RNA, 79GT, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q	62RR, 65RNA, 79GT, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q
A*68:01	A*69:01	A*68:01 + 107W	62RR, 65RNA, 79GT, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q	62RR, 65RNA, 79GT, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q
A*68:02	A*68:01, A*68:02	A*68:02	62RR, 65RNA, 79GT, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q	62RR, 65RNA, 79GT, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q
A*68:02	A*69:01	A*68:02 + 107W	62RR, 65RNA, 79GT, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q	62RR, 65RNA, 79GT, 107W, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q
A*69:01	A*69:01	A*69:01	62RR, 65RNA, 79GT, 107W, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q	62RR, 65RNA, 79GT, 107W, 127K, 144K, 144TKH, 145KHA, 150AAH, 253Q
A*74:01	A*31:01	A*74:01 + 56R	62QE, 65RNA, 79GT, 138MI, 253Q	56R, 62QE, 65RNA, 79GT, 138MI, 253Q
A*74:01	A*74:01, A*74:02	A*74:01	62QE, 65RNA, 79GT, 138MI, 253Q	62QE, 65RNA, 79GT, 138MI, 253Q

A*80:01	A*80:01	A*80:01	62EE, 65RNA, 76ANT, 79GT, 90D, 138MI, 144K, 144KR, 166DG	62EE, 65RNA, 76ANT, 79GT, 90D, 138MI, 144K, 144KR, 166DG
B*07:02	B*07:02, B*07:05	B*07:02	65QIA, 69AA, 70IAQ, 76ESN, 80N, 163EW, 180E	65QIA, 69AA, 70IAQ, 76ESN, 80N, 163EW, 180E
B*07:02	B*81:01	B*07:02 + 143S	65QIA, 69AA, 70IAQ, 76ESN, 80N, 163EW, 180E	65QIA, 69AA, 70IAQ, 76ESN, 80N, 143S, 163EW, 180E
B*07:03	B*07:03	B*07:03	69TNT, 71TTs, 76ESN, 80N, 163EW, 180E	69TNT, 71TTs, 76ESN, 80N, 163EW, 180E
B*07:03	B*40:01	B*07:03 + 41T + 45KE + 143S	69TNT, 71TTs, 76ESN, 80N, 163EW, 180E	41T, 45KE, 69TNT, 71TTs, 76ESN, 80N, 143S, 163EW, 180E
B*07:03	B*48:01, B*48:03	B*07:03 + 143S	69TNT, 71TTs, 76ESN, 80N, 163EW, 180E	69TNT, 71TTs, 76ESN, 80N, 143S, 163EW, 180E
B*08:01	B*08:01	B*08:01	69TNT, 71TTs, 76ESN, 80N, 156DA, 180E	69TNT, 71TTs, 76ESN, 80N, 156DA, 180E
B*08:01	B*41:01	B*08:01 + 41T + 45KE	69TNT, 71TTs, 76ESN, 80N, 156DA, 180E	41T, 45KE, 69TNT, 71TTs, 76ESN, 80N, 156DA, 180E
B*13:02	B*13:01, B*13:02	B*13:02	41T, 44RMA, 69TNT, 80TLR, 82LR, 131S, 144QL, 163EW	41T, 44RMA, 69TNT, 80TLR, 82LR, 131S, 144QL, 163EW
B*14:01	B*14:01, B*14:02	B*14:01	69TNT, 71TTs, 76ESN, 80N, 131S	69TNT, 71TTs, 76ESN, 80N, 131S
B*14:01	B*15:01, B*15:02, B*15:05, B*15:07, B*15:11, B*15:21, B*15:25, B*15:27, B*15:32	B*14:01 + 44RMA + 163LW	69TNT, 71TTs, 76ESN, 80N, 131S	44RMA, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LW
B*14:01	B*15:03, B*15:18	B*14:01 + 163LW	69TNT, 71TTs, 76ESN, 80N, 131S	69TNT, 71TTs, 76ESN, 80N, 131S, 163LW
B*14:01	B*15:12	B*14:01 + 44RMA + 163LS/G + 166DG	69TNT, 71TTs, 76ESN, 80N, 131S	44RMA, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LS/G, 166DG
B*14:01	B*18:01, B*18:02	B*14:01 + 44RT	69TNT, 71TTs, 76ESN, 80N, 131S	44RT, 69TNT, 71TTs, 76ESN, 80N, 131S
B*14:01	B*35:01, B*35:02, B*35:03, B*35:05, B*35:08, B*78:01	B*14:01 + 44RT + 163LW + 193PV	69TNT, 71TTs, 76ESN, 80N, 131S	44RT, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LW, 193PV

B*14:01	B*39:01, B*39:05, B*39:09, B*39:15	B*14:01 + 158T	69TNT, 71TTS, 76ESN, 80N, 131S	69TNT, 71TTS, 76ESN, 80N, 131S, 158T
B*14:01	B*45:01	B*14:01 + 41T + 45KE + 156DA + 163LS/G	69TNT, 71TTS, 76ESN, 80N, 131S	41T, 45KE, 69TNT, 71TTS, 76ESN, 80N, 131S, 156DA, 163LS/G
B*14:01	B*50:01	B*14:01 + 41T + 45KE + 163LW	69TNT, 71TTS, 76ESN, 80N, 131S	41T, 45KE, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW
B*14:02	B*14:01, B*14:02	B*14:02	69TNT, 71TTS, 76ESN, 80N, 131S	69TNT, 71TTS, 76ESN, 80N, 131S
B*14:02	B*15:01, B*15:02, B*15:05, B*15:07, B*15:11, B*15:21, B*15:25, B*15:27, B*15:32	B*14:02 + 44RMA + 163LW	69TNT, 71TTS, 76ESN, 80N, 131S	44RMA, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW
B*14:02	B*15:03, B*15:18	B*14:02 + 163LW	69TNT, 71TTS, 76ESN, 80N, 131S	69TNT, 71TTS, 76ESN, 80N, 131S, 163LW
B*14:02	B*15:12	B*14:02 + 44RMA + 163LS/G + 166DG	69TNT, 71TTS, 76ESN, 80N, 131S	44RMA, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LS/G, 166DG
B*14:02	B*18:01, B*18:02	B*14:02 + 44RT	69TNT, 71TTS, 76ESN, 80N, 131S	44RT, 69TNT, 71TTS, 76ESN, 80N, 131S
B*14:02	B*35:01, B*35:02, B*35:03, B*35:05, B*35:08, B*78:01	B*14:02 + 44RT + 163LW + 193PV	69TNT, 71TTS, 76ESN, 80N, 131S	44RT, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW, 193PV
B*14:02	B*39:01, B*39:05, B*39:09, B*39:15	B*14:02 + 158T	69TNT, 71TTS, 76ESN, 80N, 131S	69TNT, 71TTS, 76ESN, 80N, 131S, 158T
B*14:02	B*45:01	B*14:02 + 41T + 45KE + 156DA + 163LS/G	69TNT, 71TTS, 76ESN, 80N, 131S	41T, 45KE, 69TNT, 71TTS, 76ESN, 80N, 131S, 156DA, 163LS/G
B*14:02	B*50:01	B*14:02 + 41T + 45KE + 163LW	69TNT, 71TTS, 76ESN, 80N, 131S	41T, 45KE, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW
B*15:01	B*15:01, B*15:02, B*15:05, B*15:07, B*15:11, B*15:21, B*15:25, B*15:27, B*15:32	B*15:01	44RMA, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW	44RMA, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW
B*15:02	B*15:01, B*15:02, B*15:05, B*15:07, B*15:11, B*15:21, B*15:25, B*15:27, B*15:32	B*15:02	44RMA, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW	44RMA, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW

B*15:03	B*15:01, B*15:02, B*15:05, B*15:07, B*15:11, B*15:21, B*15:25, B*15:27, B*15:32	B*15:03 + 44RMA	69TNT, 71TTs, 76ESN, 80N, 131S, 163LW	44RMA, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LW
B*15:03	B*15:03, B*15:18	B*15:03	69TNT, 71TTs, 76ESN, 80N, 131S, 163LW	69TNT, 71TTs, 76ESN, 80N, 131S, 163LW
B*15:03	B*35:01, B*35:02, B*35:03, B*35:05, B*35:08, B*78:01	B*15:03 + 44RT + 193PV	69TNT, 71TTs, 76ESN, 80N, 131S, 163LW	44RT, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LW, 193PV
B*15:03	B*50:01	B*15:03 + 41T + 45KE	69TNT, 71TTs, 76ESN, 80N, 131S, 163LW	41T, 45KE, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LW
B*15:12	B*15:12	B*15:12	44RMA, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LS/G, 166DG	44RMA, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LS/G, 166DG
B*15:13	B*15:13	B*15:13	44RMA, 69TNT, 80I, 82LR, 131S, 163LW	44RMA, 69TNT, 80I, 82LR, 131S, 163LW
B*15:16	B*15:16, B*15:17	B*15:16	44RMA, 62RR, 65RNA, 69AA, 71SA, 80I, 82LR, 131S, 163LW	44RMA, 62RR, 65RNA, 69AA, 71SA, 80I, 82LR, 131S, 163LW
B*15:18	B*15:01, B*15:02, B*15:05, B*15:07, B*15:11, B*15:21, B*15:25, B*15:27, B*15:32	B*15:18 + 44RMA	69TNT, 71TTs, 76ESN, 80N, 131S, 163LW	44RMA, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LW
B*15:18	B*15:03, B*15:18	B*15:18	69TNT, 71TTs, 76ESN, 80N, 131S, 163LW	69TNT, 71TTs, 76ESN, 80N, 131S, 163LW
B*15:18	B*35:01, B*35:02, B*35:03, B*35:05, B*35:08, B*78:01	B*15:18 + 44RT + 193PV	69TNT, 71TTs, 76ESN, 80N, 131S, 163LW	44RT, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LW, 193PV
B*15:18	B*50:01	B*15:18 + 41T + 45KE	69TNT, 71TTs, 76ESN, 80N, 131S, 163LW	41T, 45KE, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LW
B*18:01	B*18:01, B*18:02	B*18:01	44RT, 69TNT, 71TTs, 76ESN, 80N, 131S	44RT, 69TNT, 71TTs, 76ESN, 80N, 131S
B*18:01	B*35:01, B*35:02, B*35:03, B*35:05, B*35:08, B*78:01	B*18:01 + 163LW + 193PV	44RT, 69TNT, 71TTs, 76ESN, 80N, 131S	44RT, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LW, 193PV
B*27:03	B*27:03, B*27:05	B*27:03	65QIA, 69AA, 71ATD, 80TLR, 82LR, 131S, 163EW	65QIA, 69AA, 71ATD, 80TLR, 82LR, 131S, 163EW

B*27:05	B*27:03, B*27:05	B*27:05	65QIA, 69AA, 71ATD, 80TLR, 82LR, 131S, 163EW	65QIA, 69AA, 71ATD, 80TLR, 82LR, 131S, 163EW
B*27:08	B*27:08	B*27:08	65QIA, 69AA, 76ESN, 80N, 131S, 163EW	65QIA, 69AA, 76ESN, 80N, 131S, 163EW
B*35:01	B*35:01, B*35:02, B*35:03, B*35:05, B*35:08, B*78:01	B*35:01	44RT, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW, 193PV	44RT, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW, 193PV
B*35:08	B*35:01, B*35:02, B*35:03, B*35:05, B*35:08, B*78:01	B*35:08	44RT, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW, 193PV	44RT, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW, 193PV
B*37:01	B*37:01	B*37:01	44RT, 69TNT, 80TLR, 82LR, 131S, 156DA	44RT, 69TNT, 80TLR, 82LR, 131S, 156DA
B*38:01	B*38:01	B*38:01	69TNT, 80I, 82LR, 131S, 158T	69TNT, 80I, 82LR, 131S, 158T
B*39:01	B*39:01, B*39:05, B*39:09, B*39:15	B*39:01	69TNT, 71TTS, 76ESN, 80N, 131S, 158T	69TNT, 71TTS, 76ESN, 80N, 131S, 158T
B*40:01	B*40:01	B*40:01	41T, 45KE, 69TNT, 71TTS, 76ESN, 80N, 143S, 163EW, 180E	41T, 45KE, 69TNT, 71TTS, 76ESN, 80N, 143S, 163EW, 180E
B*40:02	B*40:01	B*40:02 + 143S + 180E	41T, 45KE, 69TNT, 71TTS, 76ESN, 80N, 163EW	41T, 45KE, 69TNT, 71TTS, 76ESN, 80N, 143S, 163EW, 180E
B*40:02	B*40:02, B*40:03, B*40:06	B*40:02	41T, 45KE, 69TNT, 71TTS, 76ESN, 80N, 163EW	41T, 45KE, 69TNT, 71TTS, 76ESN, 80N, 163EW
B*41:01	B*41:01	B*41:01	41T, 45KE, 69TNT, 71TTS, 76ESN, 80N, 156DA, 180E	41T, 45KE, 69TNT, 71TTS, 76ESN, 80N, 156DA, 180E
B*42:01	B*42:01	B*42:01	65QIA, 69AA, 70IAQ, 76ESN, 80N, 156DA, 180E	65QIA, 69AA, 70IAQ, 76ESN, 80N, 156DA, 180E
B*44:02	B*44:02	B*44:02	41T, 45KE, 69TNT, 80TLR, 82LR, 131S, 156DA, 163LS/G	41T, 45KE, 69TNT, 80TLR, 82LR, 131S, 156DA, 163LS/G
B*44:03	B*44:02	B*44:03 + 156DA	41T, 45KE, 69TNT, 80TLR, 82LR, 131S, 163LS/G	41T, 45KE, 69TNT, 80TLR, 82LR, 131S, 156DA, 163LS/G
B*44:03	B*44:03	B*44:03	41T, 45KE, 69TNT, 80TLR, 82LR, 131S, 163LS/G	41T, 45KE, 69TNT, 80TLR, 82LR, 131S, 163LS/G

B*45:01	B*45:01	B*45:01	41T, 45KE, 69TNT, 71TTs, 76ESN, 80N, 131S, 156DA, 163LS/G	41T, 45KE, 69TNT, 71TTs, 76ESN, 80N, 131S, 156DA, 163LS/G
B*46:01	B*46:01	B*46:01	44RMA, 65QKR, 73TVs, 76VRN, 80N, 131S, 163LW	44RMA, 65QKR, 73TVs, 76VRN, 80N, 131S, 163LW
B*47:01	B*47:01	B*47:01	41T, 45KE, 69TNT, 80TLR, 82LR, 131S, 163EW	41T, 45KE, 69TNT, 80TLR, 82LR, 131S, 163EW
B*48:01	B*40:01	B*48:01 + 41T + 45KE	69TNT, 71TTs, 76ESN, 80N, 143S, 163EW, 180E	41T, 45KE, 69TNT, 71TTs, 76ESN, 80N, 143S, 163EW, 180E
B*48:01	B*48:01, B*48:03	B*48:01	69TNT, 71TTs, 76ESN, 80N, 143S, 163EW, 180E	69TNT, 71TTs, 76ESN, 80N, 143S, 163EW, 180E
B*49:01	B*49:01	B*49:01	41T, 45KE, 69TNT, 80I, 82LR, 131S, 163LW	41T, 45KE, 69TNT, 80I, 82LR, 131S, 163LW
B*50:01	B*50:01	B*50:01	41T, 45KE, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LW	41T, 45KE, 69TNT, 71TTs, 76ESN, 80N, 131S, 163LW
B*51:01	B*51:01, B*51:02, B*51:07, B*52:01, B*53:01	B*51:01	44RT, 69TNT, 80I, 82LR, 131S, 163LW, 193PV	44RT, 69TNT, 80I, 82LR, 131S, 163LW, 193PV
B*52:01	B*51:01, B*51:02, B*51:07, B*52:01, B*53:01	B*52:01	44RT, 69TNT, 80I, 82LR, 131S, 163LW, 193PV	44RT, 69TNT, 80I, 82LR, 131S, 163LW, 193PV
B*53:01	B*51:01, B*51:02, B*51:07, B*52:01, B*53:01	B*53:01	44RT, 69TNT, 80I, 82LR, 131S, 163LW, 193PV	44RT, 69TNT, 80I, 82LR, 131S, 163LW, 193PV
B*54:01	B*54:01, B*55:01, B*55:02	B*54:01	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S
B*54:01	B*56:01, B*56:03, B*56:04	B*54:01 + 163LW	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S, 163LW
B*54:01	B*67:01	B*54:01 + 158T	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S, 158T
B*54:01	B*82:02	B*54:01 + 156DA + 163LS/G	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S, 156DA, 163LS/G
B*55:01	B*54:01, B*55:01, B*55:02	B*55:01	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S

B*55:01	B*56:01, B*56:03, B*56:04	B*55:01 + 163LW	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S, 163LW
B*55:01	B*67:01	B*55:01 + 158T	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S, 158T
B*55:01	B*82:02	B*55:01 + 156DA + 163LS/G	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S, 156DA, 163LS/G
B*56:01	B*56:01, B*56:03, B*56:04	B*56:01	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S, 163LW	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S, 163LW
B*57:01	B*57:01	B*57:01	44RMA, 62GE, 62GRN, 65RNA, 69AA, 71SA, 80I, 82LR, 131S, 163LW	44RMA, 62GE, 62GRN, 65RNA, 69AA, 71SA, 80I, 82LR, 131S, 163LW
B*58:01	B*58:01	B*58:01	44RT, 62GE, 62GRN, 65RNA, 69AA, 71SA, 80I, 82LR, 131S, 163LW, 193PV	44RT, 62GE, 62GRN, 65RNA, 69AA, 71SA, 80I, 82LR, 131S, 163LW, 193PV
B*59:01	B*15:13	B*59:01 + 44RMA + 163LW	69TNT, 80I, 82LR, 131S	44RMA, 69TNT, 80I, 82LR, 131S, 163LW
B*59:01	B*38:01	B*59:01 + 158T	69TNT, 80I, 82LR, 131S	69TNT, 80I, 82LR, 131S, 158T
B*59:01	B*49:01	B*59:01 + 41T + 45KE + 163LW	69TNT, 80I, 82LR, 131S	41T, 45KE, 69TNT, 80I, 82LR, 131S, 163LW
B*59:01	B*51:01, B*51:02, B*51:07, B*52:01, B*53:01	B*59:01 + 44RT + 163LW + 193PV	69TNT, 80I, 82LR, 131S	44RT, 69TNT, 80I, 82LR, 131S, 163LW, 193PV
B*59:01	B*59:01	B*59:01	69TNT, 80I, 82LR, 131S	69TNT, 80I, 82LR, 131S
B*67:01	B*67:01	B*67:01	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S, 158T	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S, 158T
B*73:01	B*73:01	B*73:01	65QIA, 69AA, 76VRN, 80N, 90D, 163EW, 253Q, 267QE	65QIA, 69AA, 76VRN, 80N, 90D, 163EW, 253Q, 267QE
B*78:01	B*35:01, B*35:02, B*35:03, B*35:05, B*35:08, B*78:01	B*78:01	44RT, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW, 193PV	44RT, 69TNT, 71TTS, 76ESN, 80N, 131S, 163LW, 193PV
B*81:01	B*81:01	B*81:01	65QIA, 69AA, 70IAQ, 76ESN, 80N, 143S, 163EW, 180E	65QIA, 69AA, 70IAQ, 76ESN, 80N, 143S, 163EW, 180E
B*82:02	B*82:02	B*82:02	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S, 156DA, 163LS/G	65QIA, 69AA, 70IAQ, 76ESN, 80N, 131S, 156DA, 163LS/G

C*01:02	C*01:02, C*01:03	C*01:02	65QKR, 73TVS, 76VRN, 80N, 193PV, 219W, 248M	65QKR, 73TVS, 76VRN, 80N, 193PV, 219W, 248M
C*02:02	C*02:02	C*02:02	21H, 65QKR, 80K, 163EW, 193PV	21H, 65QKR, 80K, 163EW, 193PV
C*03:03	C*03:02, C*03:03, C*03:04, C*03:17	C*03:03	21H, 65QKR, 73TVS, 76VRN, 80N, 163LW, 173K, 193PV, 219W	21H, 65QKR, 73TVS, 76VRN, 80N, 163LW, 173K, 193PV, 219W
C*03:04	C*03:02, C*03:03, C*03:04, C*03:17	C*03:04	21H, 65QKR, 73TVS, 76VRN, 80N, 163LW, 173K, 193PV, 219W	21H, 65QKR, 73TVS, 76VRN, 80N, 163LW, 173K, 193PV, 219W
C*04:01	C*04:01, C*18:01	C*04:01	65QKR, 73AN, 80K, 90D, 193PV, 219W	65QKR, 73AN, 80K, 90D, 193PV, 219W
C*04:01	C*04:03, C*04:06	C*04:01 + 21H	65QKR, 73AN, 80K, 90D, 193PV, 219W	21H, 65QKR, 73AN, 80K, 90D, 193PV, 219W
C*04:03	C*04:03, C*04:06	C*04:03	21H, 65QKR, 73AN, 80K, 90D, 193PV, 219W	21H, 65QKR, 73AN, 80K, 90D, 193PV, 219W
C*05:01	C*05:01	C*05:01	65QKR, 80K, 138K, 177KT, 193PV	65QKR, 80K, 138K, 177KT, 193PV
C*06:02	C*04:01, C*18:01	C*06:02 + 219W	65QKR, 73AN, 80K, 90D, 193PV	65QKR, 73AN, 80K, 90D, 193PV, 219W
C*06:02	C*04:03, C*04:06	C*06:02 + 21H + 219W	65QKR, 73AN, 80K, 90D, 193PV	21H, 65QKR, 73AN, 80K, 90D, 193PV, 219W
C*06:02	C*06:02	C*06:02	65QKR, 73AN, 80K, 90D, 193PV	65QKR, 73AN, 80K, 90D, 193PV
C*07:01	C*07:01, C*07:06	C*07:01	76VRN, 80N, 90D, 193PL, 253Q, 267QE	76VRN, 80N, 90D, 193PL, 253Q, 267QE
C*07:01	C*07:02, C*07:29	C*07:01 + 65QKR	76VRN, 80N, 90D, 193PL, 253Q, 267QE	65QKR, 76VRN, 80N, 90D, 193PL, 253Q, 267QE
C*07:01	C*07:04	C*07:01 + 65QKR + 156DA + 177KT	76VRN, 80N, 90D, 193PL, 253Q, 267QE	65QKR, 76VRN, 80N, 90D, 156DA, 177KT, 193PL, 253Q, 267QE
C*07:02	C*07:02, C*07:29	C*07:02	65QKR, 76VRN, 80N, 90D, 193PL, 253Q, 267QE	65QKR, 76VRN, 80N, 90D, 193PL, 253Q, 267QE
C*07:02	C*07:04	C*07:02 + 156DA + 177KT	65QKR, 76VRN, 80N, 90D, 193PL, 253Q, 267QE	65QKR, 76VRN, 80N, 90D, 156DA, 177KT, 193PL, 253Q, 267QE
C*08:01	C*08:01, C*08:03	C*08:01	65QKR, 73TVS, 76VRN, 80N, 177KT, 193PV	65QKR, 73TVS, 76VRN, 80N, 177KT, 193PV
C*08:01	C*08:02, C*08:04	C*08:01 + 138K	65QKR, 73TVS, 76VRN, 80N, 177KT, 193PV	65QKR, 73TVS, 76VRN, 80N, 138K, 177KT, 193PV

C*08:02	C*08:02, C*08:04	C*08:02	65QKR, 73TVS, 76VRN, 80N, 138K, 177KT, 193PV	65QKR, 73TVS, 76VRN, 80N, 138K, 177KT, 193PV
C*12:02	C*01:02, C*01:03	C*12:02 + 73TVS + 219W + 248M	65QKR, 76VRN, 80N, 193PV	65QKR, 73TVS, 76VRN, 80N, 193PV, 219W, 248M
C*12:02	C*03:02, C*03:03, C*03:04, C*03:17	C*12:02 + 21H + 73TVS + 163LW + 173K + 219W	65QKR, 76VRN, 80N, 193PV	21H, 65QKR, 73TVS, 76VRN, 80N, 163LW, 173K, 193PV, 219W
C*12:02	C*08:01, C*08:03	C*12:02 + 73TVS + 177KT	65QKR, 76VRN, 80N, 193PV	65QKR, 73TVS, 76VRN, 80N, 177KT, 193PV
C*12:02	C*08:02, C*08:04	C*12:02 + 73TVS + 138K + 177KT	65QKR, 76VRN, 80N, 193PV	65QKR, 73TVS, 76VRN, 80N, 138K, 177KT, 193PV
C*12:02	C*12:02, C*12:03	C*12:02	65QKR, 76VRN, 80N, 193PV	65QKR, 76VRN, 80N, 193PV
C*12:02	C*14:02	C*12:02 + 73TVS + 219W	65QKR, 76VRN, 80N, 193PV	65QKR, 73TVS, 76VRN, 80N, 193PV, 219W
C*12:02	C*14:03	C*12:02 + 21H + 73TVS + 219W	65QKR, 76VRN, 80N, 193PV	21H, 65QKR, 73TVS, 76VRN, 80N, 193PV, 219W
C*14:02	C*01:02, C*01:03	C*14:02 + 248M	65QKR, 73TVS, 76VRN, 80N, 193PV, 219W	65QKR, 73TVS, 76VRN, 80N, 193PV, 219W, 248M
C*14:02	C*03:02, C*03:03, C*03:04, C*03:17	C*14:02 + 21H + 163LW + 173K	65QKR, 73TVS, 76VRN, 80N, 193PV, 219W	21H, 65QKR, 73TVS, 76VRN, 80N, 163LW, 173K, 193PV, 219W
C*14:02	C*14:02	C*14:02	65QKR, 73TVS, 76VRN, 80N, 193PV, 219W	65QKR, 73TVS, 76VRN, 80N, 193PV, 219W
C*14:02	C*14:03	C*14:02 + 21H	65QKR, 73TVS, 76VRN, 80N, 193PV, 219W	21H, 65QKR, 73TVS, 76VRN, 80N, 193PV, 219W
C*15:02	C*02:02	C*15:02 + 65QKR + 163EW	21H, 80K, 193PV	21H, 65QKR, 80K, 163EW, 193PV
C*15:02	C*04:03, C*04:06	C*15:02 + 65QKR + 73AN + 90D + 219W	21H, 80K, 193PV	21H, 65QKR, 73AN, 80K, 90D, 193PV, 219W
C*15:02	C*15:02, C*15:05	C*15:02	21H, 80K, 193PV	21H, 80K, 193PV
C*16:01	B*46:01	C*16:01 + 44RMA + 131S + 163LW	65QKR, 73TVS, 76VRN, 80N	44RMA, 65QKR, 73TVS, 76VRN, 80N, 131S, 163LW

C*16:01	C*01:02, C*01:03	C*16:01 + 193PV + 219W + 248M	65QKR, 73TVS, 76VRN, 80N	65QKR, 73TVS, 76VRN, 80N, 193PV, 219W, 248M
C*16:01	C*03:02, C*03:03, C*03:04, C*03:17	C*16:01 + 21H + 163LW + 173K + 193PV + 219W	65QKR, 73TVS, 76VRN, 80N	21H, 65QKR, 73TVS, 76VRN, 80N, 163LW, 173K, 193PV, 219W
C*16:01	C*08:01, C*08:03	C*16:01 + 177KT + 193PV	65QKR, 73TVS, 76VRN, 80N	65QKR, 73TVS, 76VRN, 80N, 177KT, 193PV
C*16:01	C*08:02, C*08:04	C*16:01 + 138K + 177KT + 193PV	65QKR, 73TVS, 76VRN, 80N	65QKR, 73TVS, 76VRN, 80N, 138K, 177KT, 193PV
C*16:01	C*14:02	C*16:01 + 193PV + 219W	65QKR, 73TVS, 76VRN, 80N	65QKR, 73TVS, 76VRN, 80N, 193PV, 219W
C*16:01	C*14:03	C*16:01 + 21H + 193PV + 219W	65QKR, 73TVS, 76VRN, 80N	21H, 65QKR, 73TVS, 76VRN, 80N, 193PV, 219W
C*16:01	C*16:01, C*16:04	C*16:01	65QKR, 73TVS, 76VRN, 80N	65QKR, 73TVS, 76VRN, 80N
C*17:01	C*17:01	C*17:01	65QKR, 73AN, 80K, 143S, 163EW, 193PV, 253Q, 267QE	65QKR, 73AN, 80K, 143S, 163EW, 193PV, 253Q, 267QE
C*18:01	C*04:01, C*18:01	C*18:01	65QKR, 73AN, 80K, 90D, 193PV, 219W	65QKR, 73AN, 80K, 90D, 193PV, 219W
C*18:01	C*04:03, C*04:06	C*18:01 + 21H	65QKR, 73AN, 80K, 90D, 193PV, 219W	21H, 65QKR, 73AN, 80K, 90D, 193PV, 219W
DQB1*02:01	DQB1*02:01, DQB1*02:02	DQB1*02:01	52LL, 77R, 84QL, 182S, rq70RK/R	52LL, 77R, 84QL, 182S, rq70RK/R
DQB1*02:02	DQB1*02:01, DQB1*02:02	DQB1*02:02	52LL, 77R, 84QL, 182S, rq70RK/R	52LL, 77R, 84QL, 182S, rq70RK/R
DQB1*03:01	DQB1*03:01	DQB1*03:01	45EV, 46VY, 55PP, 77T, 84QL, 182N	45EV, 46VY, 55PP, 77T, 84QL, 182N
DQB1*03:02	DQB1*03:02, DQB1*03:03, DQB1*03:05	DQB1*03:02	45GV, 46VY, 55PP, 77T, 84QL, 182N	45GV, 46VY, 55PP, 77T, 84QL, 182N
DQB1*03:03	DQB1*03:02, DQB1*03:03, DQB1*03:05	DQB1*03:03	45GV, 46VY, 55PP, 77T, 84QL, 182N	45GV, 46VY, 55PP, 77T, 84QL, 182N
DQB1*04:01	DQB1*04:01, DQB1*04:02	DQB1*04:01	45GV, 46VY, 55R, 56L, 74S, 77T, 84QL, 182N, rq75VT	45GV, 46VY, 55R, 56L, 74S, 77T, 84QL, 182N, rq75VT
DQB1*04:02	DQB1*04:01, DQB1*04:02	DQB1*04:02	45GV, 46VY, 55R, 56L, 74S, 77T, 84QL, 182N, rq75VT	45GV, 46VY, 55R, 56L, 74S, 77T, 84QL, 182N, rq75VT

DQB1*05:01	DQB1*05:01	DQB1*05:01	45GV, 46VY, 52PQ, 55R, 57V, 74S, 77R, 87Y, 116I, 125SQ, 182S	45GV, 46VY, 52PQ, 55R, 57V, 74S, 77R, 87Y, 116I, 125SQ, 182S
DQB1*05:02	DQB1*05:01	DQB1*05:02 + 57V + 125SQ	45GV, 46VY, 52PQ, 55R, 74S, 77R, 87Y, 116I, 182S	45GV, 46VY, 52PQ, 55R, 57V, 74S, 77R, 87Y, 116I, 125SQ, 182S
DQB1*05:02	DQB1*05:02	DQB1*05:02	45GV, 46VY, 52PQ, 55R, 74S, 77R, 87Y, 116I, 182S	45GV, 46VY, 52PQ, 55R, 74S, 77R, 87Y, 116I, 182S
DQB1*05:02	DQB1*05:03	DQB1*05:02 + 125SQ	45GV, 46VY, 52PQ, 55R, 74S, 77R, 87Y, 116I, 182S	45GV, 46VY, 52PQ, 55R, 74S, 77R, 87Y, 116I, 125SQ, 182S
DQB1*05:03	DQB1*05:01	DQB1*05:03 + 57V	45GV, 46VY, 52PQ, 55R, 74S, 77R, 87Y, 116I, 125SQ, 182S	45GV, 46VY, 52PQ, 55R, 57V, 74S, 77R, 87Y, 116I, 125SQ, 182S
DQB1*05:03	DQB1*05:03	DQB1*05:03	45GV, 46VY, 52PQ, 55R, 74S, 77R, 87Y, 116I, 125SQ, 182S	45GV, 46VY, 52PQ, 55R, 74S, 77R, 87Y, 116I, 125SQ, 182S
DQB1*06:01	DQB1*06:01, DQB1*06:02, DQB1*06:03, DQB1*06:10, DQB1*06:11	DQB1*06:01	45GV, 46VY, 52PQ, 55R, 77T, 87F, 182S	45GV, 46VY, 52PQ, 55R, 77T, 87F, 182S
DQB1*06:02	DQB1*06:01, DQB1*06:02, DQB1*06:03, DQB1*06:10, DQB1*06:11	DQB1*06:02	45GV, 46VY, 52PQ, 55R, 77T, 87F, 182S	45GV, 46VY, 52PQ, 55R, 77T, 87F, 182S
DQB1*06:03	DQB1*06:01, DQB1*06:02, DQB1*06:03, DQB1*06:10, DQB1*06:11	DQB1*06:03	45GV, 46VY, 52PQ, 55R, 77T, 87F, 182S	45GV, 46VY, 52PQ, 55R, 77T, 87F, 182S
DQB1*06:04	DQB1*06:04, DQB1*06:05, DQB1*06:09	DQB1*06:04	45GV, 46VY, 52PQ, 55R, 57V, 77T, 87Y, 182S	45GV, 46VY, 52PQ, 55R, 57V, 77T, 87Y, 182S
DRB1*01:01	DRB1*01:01, DRB1*01:02	DRB1*01:01	4R, 13FE, 25R, 30C, 67LQ, 70QT, 73A, 77T, 96EV, rq75VT	4R, 13FE, 25R, 30C, 67LQ, 70QT, 73A, 77T, 96EV, rq75VT
DRB1*01:02	DRB1*01:01, DRB1*01:02	DRB1*01:02	4R, 13FE, 25R, 30C, 67LQ, 70QT, 73A, 77T, 96EV, rq75VT	4R, 13FE, 25R, 30C, 67LQ, 70QT, 73A, 77T, 96EV, rq75VT
DRB1*01:03	DRB1*01:03	DRB1*01:03	4R, 13FE, 25R, 30C, 70D, 70DA, 73A, 77T, 96EV, rp67IE, rq75VT	4R, 13FE, 25R, 30C, 70D, 70DA, 73A, 77T, 96EV, rp67IE, rq75VT

DRB1*03:01	DRB1*03:01	DRB1*03:01	4R, 11STS, 25R, 47F, 67LQ, 74R, 77N, 96HK	4R, 11STS, 25R, 47F, 67LQ, 74R, 77N, 96HK
DRB1*03:02	DRB1*03:01	DRB1*03:02 + 47F	4R, 11STS, 25R, 67LQ, 74R, 77N, 96HK	4R, 11STS, 25R, 47F, 67LQ, 74R, 77N, 96HK
DRB1*03:02	DRB1*03:02	DRB1*03:02	4R, 11STS, 25R, 67LQ, 74R, 77N, 96HK	4R, 11STS, 25R, 67LQ, 74R, 77N, 96HK
DRB1*03:03	DRB1*03:01	DRB1*03:03 + 4R + 47F	11STS, 25R, 67LQ, 74R, 77N, 96HK	4R, 11STS, 25R, 47F, 67LQ, 74R, 77N, 96HK
DRB1*03:03	DRB1*03:02	DRB1*03:03 + 4R	11STS, 25R, 67LQ, 74R, 77N, 96HK	4R, 11STS, 25R, 67LQ, 74R, 77N, 96HK
DRB1*03:03	DRB1*03:03	DRB1*03:03	11STS, 25R, 67LQ, 74R, 77N, 96HK	11STS, 25R, 67LQ, 74R, 77N, 96HK
DRB1*04:01	DRB1*04:01, DRB1*04:03, DRB1*04:04, DRB1*04:07	DRB1*04:01	4R, 25R, 37YV, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT	4R, 25R, 37YV, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT
DRB1*04:01	DRB1*04:05, DRB1*04:10	DRB1*04:01 + 57S	4R, 25R, 37YV, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT	4R, 25R, 37YV, 57S, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT
DRB1*04:02	DRB1*04:02	DRB1*04:02	4R, 25R, 37YV, 70D, 70DA, 73A, 77T, 96Y, 98E, 104A, rp67IE, rq75VT	4R, 25R, 37YV, 70D, 70DA, 73A, 77T, 96Y, 98E, 104A, rp67IE, rq75VT
DRB1*04:03	DRB1*04:01, DRB1*04:03, DRB1*04:04, DRB1*04:07	DRB1*04:03	4R, 25R, 37YV, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT	4R, 25R, 37YV, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT
DRB1*04:03	DRB1*04:05, DRB1*04:10	DRB1*04:03 + 57S	4R, 25R, 37YV, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT	4R, 25R, 37YV, 57S, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT
DRB1*04:04	DRB1*04:01, DRB1*04:03, DRB1*04:04, DRB1*04:07	DRB1*04:04	4R, 25R, 37YV, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT	4R, 25R, 37YV, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT
DRB1*04:04	DRB1*04:05, DRB1*04:10	DRB1*04:04 + 57S	4R, 25R, 37YV, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT	4R, 25R, 37YV, 57S, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT
DRB1*04:05	DRB1*04:05, DRB1*04:10	DRB1*04:05	4R, 25R, 37YV, 57S, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT	4R, 25R, 37YV, 57S, 67LQ, 70QT, 73A, 77T, 96Y, 98E, 104A, rq75VT
DRB1*07:01	DRB1*07:01	DRB1*07:01	4Q, 25Q, 57V, 70D, 77T, 98E, 98ES, 104A, 181M, rq75VT	4Q, 25Q, 57V, 70D, 77T, 98E, 98ES, 104A, 181M, rq75VT
DRB1*08:01	DRB1*08:01, DRB1*08:03	DRB1*08:01	4R, 16Y, 25R, 37YV, 57S, 70D, 70DA, 73A, 77T, 96HK, rq75VT	4R, 16Y, 25R, 37YV, 57S, 70D, 70DA, 73A, 77T, 96HK, rq75VT

DRB1*08:02	DRB1*08:01, DRB1*08:03	DRB1*08:02 + 57S	4R, 16Y, 25R, 37YV, 70D, 70DA, 73A, 77T, 96HK, rq75VT 4R, 16Y, 25R, 37YV, 70D, 70DA, 73A, 77T, 96HK, rq75VT 4Q, 13FE, 25R, 57V, 70R, 73A, 77T, 98E, 98ES, 104A, 181M, rq70RK/R, rq75VT 4R, 13FE, 25R, 30RV, 70R, 73A, 77T, 181M, rq70RK/R, rq75VT 4R, 11STS, 25R, 37YV, 47F, 57DE, 70D, 70DA, 73A, 77T, 96HK, rp58E, rp58EE, rq75VT 4R, 11STS, 25R, 37YV, 47F, 57DE, 70D, 70DA, 73A, 77T, 96HK, rp58E, rp58EE, rq75VT 4R, 11STS, 25R, 37YV, 47F, 57DE, 70D, 70DA, 73A, 77T, 96HK, rp58E, rp58EE, rq75VT 4R, 11STS, 25R, 37L, 47F, 57V, 70D, 70DA, 73A, 77T, 96HK, rq75VT 4R, 11STS, 25R, 37L, 47F, 57V, 70D, 70DA, 73A, 77T, 96HK, rq75VT 4R, 11STS, 25R, 47F, 70D, 70DA, 73A, 77T, 96HK, rp67IE, rq75VT 4R, 11STS, 25R, 37YV, 57S, 70D, 70DA, 73A, 77T, 96HK, rq75VT 4R, 11STS, 25R, 47F, 70D, 70DA, 73A, 77T, 96HK, rq75VT 4R, 11STS, 25R, 37YV, 57S, 70D, 70DA, 73A, 77T, 96HK, rp75VT 4R, 11STS, 25R, 37YV, 47F, 57DE, 70D, 70DA, 73A, 77T, 96HK, rp58E, rp58EE, rq75VT 4R, 11STS, 25R, 47F, 70D, 70DA, 73A, 77T, 96HK, rp67IE, rq75VT
DRB1*08:02	DRB1*08:02	DRB1*08:02	
DRB1*09:01	DRB1*09:01	DRB1*09:01	
DRB1*10:01	DRB1*10:01	DRB1*10:01	
DRB1*11:01	DRB1*11:01, DRB1*11:03, DRB1*11:04, DRB1*11:06	DRB1*11:01	
DRB1*11:03	DRB1*11:01, DRB1*11:03, DRB1*11:04, DRB1*11:06	DRB1*11:03	
DRB1*11:04	DRB1*11:01, DRB1*11:03, DRB1*11:04, DRB1*11:06	DRB1*11:04	
DRB1*12:01	DRB1*12:01, DRB1*12:02	DRB1*12:01	
DRB1*12:02	DRB1*12:01, DRB1*12:02	DRB1*12:02	
DRB1*13:01	DRB1*13:01, DRB1*13:02	DRB1*13:01	
DRB1*13:03	DRB1*13:03, DRB1*13:12	DRB1*13:03	
DRB1*13:05	DRB1*11:01, DRB1*11:03, DRB1*11:04, DRB1*11:06	DRB1*13:05 + 37YV + 57DE + rp58E + rp58EE	4R, 11STS, 25R, 47F, 70D, 70DA, 73A, 77T, 96HK, rq75VT
DRB1*13:05	DRB1*13:01, DRB1*13:02	DRB1*13:05 + rp67IE	4R, 11STS, 25R, 47F, 70D, 70DA, 73A, 77T, 96HK, rq75VT

DRB1*13:05	DRB1*13:05	DRB1*13:05	4R, 11STS, 25R, 47F, 70D, 70DA, 73A, 77T, 96HK, rq75VT	4R, 11STS, 25R, 47F, 70D, 70DA, 73A, 77T, 96HK, rq75VT
DRB1*14:01	DRB1*14:01, DRB1*14:05, DRB1*14:07, DRB1*14:54	DRB1*14:01	4R, 11STS, 25R, 70R, 73A, 77T, 96HK, rq70RK/R, rq75VT	4R, 11STS, 25R, 70R, 73A, 77T, 96HK, rq70RK/R, rq75VT
DRB1*14:03	DRB1*11:01, DRB1*11:03, DRB1*11:04, DRB1*11:06	DRB1*14:03 + 37YV + 47F + 57DE + rp58E + rp58EE	4R, 11STS, 25R, 70D, 70DA, 73A, 77T, 96HK, rq75VT	4R, 11STS, 25R, 37YV, 47F, 57DE, 70D, 70DA, 73A, 77T, 96HK, rp58E, rp58EE, rq75VT
DRB1*14:03	DRB1*13:01, DRB1*13:02	DRB1*14:03 + 47F + rp67IE	4R, 11STS, 25R, 70D, 70DA, 73A, 77T, 96HK, rq75VT	4R, 11STS, 25R, 47F, 70D, 70DA, 73A, 77T, 96HK, rp67IE, rq75VT
DRB1*14:03	DRB1*13:03, DRB1*13:12	DRB1*14:03 + 37YV + 57S	4R, 11STS, 25R, 70D, 70DA, 73A, 77T, 96HK, rq75VT	4R, 11STS, 25R, 37YV, 57S, 70D, 70DA, 73A, 77T, 96HK, rq75VT
DRB1*14:03	DRB1*13:05	DRB1*14:03 + 47F	4R, 11STS, 25R, 70D, 70DA, 73A, 77T, 96HK, rq75VT	4R, 11STS, 25R, 47F, 70D, 70DA, 73A, 77T, 96HK, rq75VT
DRB1*14:03	DRB1*14:03	DRB1*14:03	4R, 11STS, 25R, 70D, 70DA, 73A, 77T, 96HK, rq75VT	4R, 11STS, 25R, 70D, 70DA, 73A, 77T, 96HK, rq75VT
DRB1*14:04	DRB1*14:04	DRB1*14:04	4R, 16Y, 25R, 70R, 73A, 77T, 96HK, rq70RK/R, rq75VT	4R, 16Y, 25R, 70R, 73A, 77T, 96HK, rq70RK/R, rq75VT
DRB1*15:01	DRB1*15:01, DRB1*15:02, DRB1*15:03	DRB1*15:01	4R, 25R, 47F, 70QT, 73A, 77T, 142M, rq75VT	4R, 25R, 47F, 70QT, 73A, 77T, 142M, rq75VT
DRB1*15:02	DRB1*15:01, DRB1*15:02, DRB1*15:03	DRB1*15:02	4R, 25R, 47F, 70QT, 73A, 77T, 142M, rq75VT	4R, 25R, 47F, 70QT, 73A, 77T, 142M, rq75VT
DRB1*15:03	DRB1*15:01, DRB1*15:02, DRB1*15:03	DRB1*15:03	4R, 25R, 47F, 70QT, 73A, 77T, 142M, rq75VT	4R, 25R, 47F, 70QT, 73A, 77T, 142M, rq75VT
DRB1*16:01	DRB1*16:01, DRB1*16:02	DRB1*16:01	4R, 25R, 70D, 70DA, 73A, 77T, 142M, rq75VT	4R, 25R, 70D, 70DA, 73A, 77T, 142M, rq75VT
DRB1*16:02	DRB1*16:01, DRB1*16:02	DRB1*16:02	4R, 25R, 70D, 70DA, 73A, 77T, 142M, rq75VT	4R, 25R, 70D, 70DA, 73A, 77T, 142M, rq75VT

**Table S2.** Numbers of eplets that were shared by LSA antigens and their eplet-predicted antigens.

<b>HLA locus</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Mean Normalization*</b>
A	5	11	8.31	0.551
C	3	9	5.16	0.360
B	4	8	6.02	0.504
DRB1	6	14	10.6	0.570
DQB1	5	10	6.93	0.387

\* Normalization of mean = (Mean - Min) / (Max - Min), which were comparable between HLA loci.