Supplemental Table 1: Peptides and variants tested.

Peptide	Sequence
1a	MGARASVLSGG
1b	MGARASILSGG
2a	GARASVLSGGE
2b	GARASVLSGGK
2c	GARASVLSGGQ
2d	GARASILSGGE
3a	ARASVLSGGEL
3b	ARASVLSGGKL
3c	ARASVLSGGQL
3d	ARASILSGGEL
4a	RASVLSGGELD
4b	RASVLSGGKLD
4c	RASVLSGGQLD
4d	RASILSGGELD
5a	ASVLSGGELDR
5b	ASVLSGGELDK
5c	ASVLSGGQLDR
5d	ASVLSGGKLDR
5e	ASILSGGELDR
6a	SVLSGGELDRW
6b	SVLSGGELDKW
6c	SVLSGGQLDRW
6d	SVLSGGKLDKW
6e	SVLSGGKLDRW
7a	VLSGGELDRWE
7b	VLSGGELDKWE
7c	VLSGGKLDRWE
7d	VLSGGKLDKWE
7e	VLSGGQLDRWE
8a	LSGGELDRWEK
8b	LSGGKLDRWEK
8c	LSGGELDKWEK
8d	LSGGQLDRWEK
8e	LSGGKLDKWEK
9a	SGGELDRWEKI
9b	SGGKLDRWEKI
9c	SGGELDKWEKI
9d	SGGQLDRWEKI
9e	SGGKLDKWEKI
10a	GGELDRWEKIR
10b	GGKLDRWEKIR
10c	GGELDKWEKIR
10d	GGQLDRWEKIR
10e	GGKLDKWEKIR
11a	GELDRWEKIRL
11b	GELDKWEKIRL
11c	GKLDRWEKIRL
11d	GQLDRWEKIRL
11e	GKLDKWEKIRL
12a	ELDRWEKIRLR

Peptide	Sequence
222a	PIAPGQMREPR
222b	PVAPGQMREPR
222c	PVAPGQMRDPR
222d	PIAPGQIREPR
223a	IAPGQMREPRG
223b	VAPGQMREPRG
223c	VAPGQMRDPRG
223d	IAPGQIREPRG
224a	APGQMREPRGS
224b	APGQIREPRGS
224c	APGQMRDPRGS
225a	PGQMREPRGSD
225b	PGQIREPRGSD
225c	PGQMRDPRGSD
226a	GQMREPRGSDI
226b	GQIREPRGSDI
226c	GQMRDPRGSDI
227a	QMREPRGSDIA
227b	QIREPRGSDIA
227c	QMRDPRGSDIA
228a	MREPRGSDIAG
228b	IREPRGSDIAG
228c	MRDPRGSDIAG
229a	REPRGSDIAGT
229b	RDPRGSDIAGT
229c	REPRGSDIAGS
230a	EPRGSDIAGTT
230b	DPRGSDIAGTT
230c	EPRGSDIAGST
231a	PRGSDIAGTTS
231b	PRGSDIAGSTS
232a	RGSDIAGTTST
232b	RGSDIAGTTSN
232c	RGSDIAGSTST
233a	GSDIAGTTSTL
233b	GSDIAGTTSNL
233c	GSDIAGSTSTL
234a	SDIAGTTSTLQ
234b	SDIAGTTSNLQ
234c	SDIAGSTSTLQ
235a	DIAGTTSTLQE
235b	DIAGTTSNLQE
235c	DIAGSTSTLQE
236a	IAGTTSTLQEQ
236b	IAGTTSNLQEQ
236c	IAGSTSTLQEQ
237a	AGTTSTLQEQI
237b	AGTTSNLQEQI
238a	GTTSTLQEQIG
238b	GTTSTLQEQIA

Supplemental Table 1: Peptides and variants tested.

12b	ELDKWEKIRLR
12c	KLDRWEKIRLR
12d	QLDRWEKIRLR
12e	KLDKWEKIRLR
13a	LDRWEKIRLRP
13b	LDKWEKIRLRP
14a	DRWEKIRLRPG
14b	DKWEKIRLRPG
15a	RWEKIRLRPGG
15b	KWEKIRLRPGG
16a	WEKIRLRPGGK
16b	WERIRLRPGGK
16c	WEKIRLRPGGR
17a	EKIRLRPGGKK
17b	ERIRLRPGGKK
17c	EKIRLRPGGRK
18a	KIRLRPGGKKK
18b	KIRLRPGGKKQ
18c	KIRLRPGGKKR
18d	RIRLRPGGKKK
19a	IRLRPGGKKKY
19b	IRLRPGGKKQY
19c	IRLRPGGKKRY
20a	RLRPGGKKKYK
20b	RLRPGGKKKYR
20c	RLRPGGKKKYQ
20d	RLRPGGKKQYK
20e	RLRPGGKKQYR
21a	LRPGGKKKYKL
21b	LRPGGKKKYRL
21c	LRPGGKKKYQL
21d	LRPGGKKQYKL
21e	LRPGGKKQYRL
22a	RPGGKKKYKLK
22b	RPGGKKKYRLK
22c	RPGGKKKYQLK
22d	RPGGKKQYKLK
22e	RPGGKKQYRLK
23a	PGGKKKYKLKH
23b	PGGKKKYRLKH
23c	PGGKKKYQLKH
23d	PGGKKQYKLKH
23e	PGGKKQYRLKH
24a	GGKKKYKLKHI
24b	GGKKKYRLKHI
24c	GGKKKYQLKHI
24d	GGKKQYKLKHI
24e	GGKKKYRLKHL
25a	GKKKYKLKHIV
25b	GKKKYRLKHIV
25c	GKKQYKLKHIV
239a	TTSTLQEQIGW
239b	TTSTLQEQIAW
240a	TSTLQEQIGWM
240b	TSTLQEQIAWM
241a	STLQEQIGWMT
241b	STLQEQIAWMT
242a	TLQEQIGWMTN
242b	TLQEQIGWMTS
242c	TLQEQIGWMTH
242d	TLQEQIAWMTN
243a	LQEQIGWMTNN
243b	LQEQIGWMTSN
243c	LQEQIAWMTNN
243d	LQEQIGWMTHN
244a	QEQIGWMTNNP
244b	QEQIGWMTSNP
244c	QEQIAWMTNNP
244d	QEQIGWMTHNP
245a	EQIGWMTNNPP
245b	EQIGWMTSNPP
245c	EQIGWMTHNPP
245d	EQIAWMTNNPP
246a	QIGWMTNNPPI
246b	QIGWMTSNPPI
246c	QIGWMTHNPPI
246d	QIAWMTNNPPI
247a	IGWMTNNPPIP
247b	IGWMTSNPPIP
247c	IGWMTHNPPIP
247d	IAWMTNNPPIP
248a	GWMTNNPPIPV
248b	GWMTSNPPIPV
248c	GWMTHNPPIPV
248d	AWMTNNPPIPV
249a	WMTNNPPIPVG
249b	WMTSNPPIPVG
249c	WMTHNPPIPVG
250a	MTNNPPIPVGE
250b	MTSNPPIPVGE
250c	MTHNPPIPVGE
251a	TNNPPIPVGEI
251b	TSNPPIPVGEI
251c	THNPPIPVGEI
252a	NNPPIPVGEIY
252b	SNPPIPVGEIY
252c	HNPPIPVGEIY
253a	NPPIPVGEIYK
253b	NPPIPVGDIYK
254a	PPIPVGEIYKR
254b	PPIPVGDIYKR
255a	PIPVGEIYKRW

Supplemental Table 1: Peptides and variants tested.

25d	GKKKYQLKHIV
26a	KKKYKLKHIVW
26b	KKKYRLKHIVW
26c	KKKYQLKHIVW
26d	KKQYKLKHIVW
26e	KKKYRLKHLVW
27a	KKYKLKHIVWA
27b	KKYRLKHIVWA
27c	KKYQLKHIVWA
27d	KQYKLKHIVWA
27e	KKYRLKHLVWA
27f	KRYKLKHIVWA
28a	KYKLKHIVWAS
28b	KYRLKHIVWAS
28c	QYKLKHIVWAS
28d	KYQLKHIVWAS
28e	KYRLKHLVWAS
28f	RYKLKHIVWAS
29a	YKLKHIVWASR
29b	YRLKHIVWASR
29c	YQLKHIVWASR
29d	YRLKHLVWASR
29e	YKLKHLVWASR
30a	KLKHIVWASRE
30b	RLKHIVWASRE
30c	QLKHIVWASRE
30d	RLKHLVWASRE
30e	KLKHLVWASRE
31a	LKHIVWASREL
31b	LKHLVWASREL
32a	KHIVWASRELE
32b	KHLVWASRELE
33a	HIVWASRELER
33b	HLVWASRELER
34a	IVWASRELERF
34b	LVWASRELERF
35	VWASRELERFA
36a	WASRELERFAV
36b	WASRELERFAL
37a	ASRELERFAVN
37b	ASRELERFALN
38a	SRELERFAVNP
38b	SRELERFALNP
39	RELERFAVNPG
40	ELERFAVNPGL
41	LERFAVNPGLL
42	ERFAVNPGLLE
43a	RFAVNPGLLET
43b	RFALNPGLLET
44a	FAVNPGLLETS
44b	FAVNPGLLETA
255b	PIPVGDIYKRW
256a	IPVGEIYKRWI
256b	IPVGDIYKRWI
257a	PVGEIYKRWII
257b	PVGDIYKRWII
258a	VGEIYKRWIIL
258b	VGEIYKRWIIM
259a	GEIYKRWIILG
259b	GEIYKRWIIMG
260a	EIYKRWIILGL
260b	EIYKRWIIMGL
261a	IYKRWIILGLN
261b	IYKRWIIMGLN
262a	YKRWIILGLNK
262b	YKRWIIMGLNK
263a	KRWIILGLNKI
263b	KRWIIMGLNKI
264a	RWIILGLNKIV
264b	RWIIMGLNKIV
265a	WIILGLNKIVR
265b	WIIMGLNKIVR
266a	IILGLNKIVRM
266b	IIMGLNKIVRM
267a	ILGLNKIVRMY
267b	IMGLNKIVRMY
268a	LGLNKIVRMYS
268b	MGLNKIVRMYS
269	GLNKIVRMYSP
270a	LNKIVRMYSPT
270b	LNKIVRMYSPV
271a	NKIVRMYSPTS
271b	NKIVRMYSPVS
272a	KIVRMYSPTSI
272b	KIVRMYSPVSI
273a	IVRMYSPTSIL
273b	IVRMYSPVSIL
274a	VRMYSPTSILD
274b	VRMYSPVSILD
275a	RMYSPTSILDI
275b	RMYSPVSILDI
276a	MYSPTSILDIR
276b	MYSPTSILDIK
276c	MYSPVSILDIR
277a	YSPTSILDIRQ
277b	YSPTSILDIKQ
277c	YSPVSILDIRQ
278a	SPTSILDIRQG
278b	SPTSILDIKQG
278c	SPVSILDIRQG
279a	PTSILDIRQGP
279b	PTSILDIKQGP

Supplemental Table 1: Peptides and variants tested.

45a	AVNPGLLETSE
45b	AVNPGLLETAE
45c	AVNPGLLETSG
46a	VNPGLLETSEG
46b	VNPGLLETAEG
46c	VNPGLLETSGG
47a	NPGLLETSEGC
47b	NPGLLETAEGC
47c	NPGLLETSGGC
48a	PGLLETSEGCR
48b	PGLLETAEGCR
48c	PGLLETSGGCR
48d	PGLLETSEGCK
49a	GLLETSEGCRQ
49b	GLLETAEGCRQ
49c	GLLETSGGCRQ
49d	GLLETSEGCKQ
50a	LLETSEGCRQI
50b	LLETAEGCRQI
50c	LLETSGGCRQI
50d	LLETSEGCKQI
51a	LETSEGCRQIL
51b	LETAEGCRQIL
51c	LETSGGCRQIL
52a	ETSEGCRQILG
52b	ETAEGCRQILG
52c	ETSEGCRQILE
53a	TSEGCRQILGQ
53b	TAEGCRQILGQ
53c	TSEGCRQILEQ
54a	SEGCRQILGQL
54b	AEGCRQILGQL
54c	SEGCRQILEQL
55a	EGCRQILGQLQ
55b	EGCRQILEQLQ
56a	GCRQILGQLQP
56b	GCRQILEQLQP
57a	CRQILGQLQPS
57b	CRQILGQLQPA
57c	CRQILEQLQPS
58a	RQILGQLQPSL
58b	RQILGQLQPAL
58c	RQILEQLQPSL
59a	QILGQLQPSLQ
59b	QILGQLQPALQ
59c	QILEQLQPSLQ
60a	ILGQLQPSLQT
60b	ILGQLQPALQT
60c	ILEQLQPSLQT
61a	LGQLQPSLQTG

279c	PVSILDIRQGP
280a	TSILDIRQGPK
280b	TSILDIKQGPK
280c	VSILDIRQGPK
281a	SILDIRQGPKE
281b	SILDIKQGPKE
282a	ILDIRQGPKEP
282b	ILDIKQGPKEP
283a	LDIRQGPKEPF
283b	LDIKQGPKEPF
284a	DIRQGPKEPFR
284b	DIKQGPKEPFR
285a	IRQGPKEPFRD
285b	IKQGPKEPFRD
286a	RQGPKEPFRDY
286b	KQGPKEPFRDY
287	QGPKEPFRDYV
288	GPKEPFRDYVD
289	PKEPFRDYVDR
290	KEPFRDYVDRF
291	EPFRDYVDRFY
292	PFRDYVDRFYK
293	FRDYVDRFYKT
294	RDYVDRFYKTL
295	DYVDRFYKTLR
296	YVDRFYKTLRA
297	VDRFYKTLRAE
298	DRFYKTLRAEQ
299	RFYKTLRAEQA
300a	FYKTLRAEQAS
300b	FYKTLRAEQAT
301a	YKTLRAEQASQ
301b	YKTLRAEQATQ
302a	KTLRAEQASQE
302b	KTLRAEQASQD
302c	KTLRAEQATQE
303a	TLRAEQASQEV
303b	TLRAEQASQDV
303c	TLRAEQATQEV
304a	LRAEQASQEVK
304b	LRAEQASQDVK
304c	LRAEQATQEVK
305a	RAEQASQEVKN
305b	RAEQASQDVKN
305c	RAEQATQEVKN
306a	AEQASQEVKNW
306b	AEQASQDVKNW
306c	AEQATQEVKNW
307a	EQASQEVKNWM
307b	EQASQDVKNWM

Supplemental Table 1: Peptides and variants tested.

61b	LGQLQPALQTG
61c	LEQLQPSLQTG
62a	GQLQPSLQTGS
62b	GQLQPALQTGS
62c	EQLQPSLQTGS
63a	QLQPSLQTGSE
63b	QLQPALQTGSE
64a	LQPSLQTGSEE
64b	LQPALQTGSEE
65a	QPSLQTGSEEL
65b	QPALQTGSEEL
66a	PSLQTGSEELK
66b	PSLQTGSEELR
66c	PALQTGSEELR
66d	PALQTGSEELK
67a	SLQTGSEELKS
67b	SLQTGSEELRS
67c	ALQTGSEELRS
67d	ALQTGSEELKS
68a	LQTGSEELKSL
68b	LQTGSEELRSL
69a	QTGSEELKSLY
69b	QTGSEELRSLY
69c	QTGSEELKSLF
69d	QTGSEELRSLF
70a	TGSEELKSLYN
70b	TGSEELRSLYN
70c	TGSEELKSLFN
70d	TGSEELRSLFN
71a	GSEELKSLYNT
71b	GSEELRSLYNT
71c	GSEELKSLFNT
71d	GSEELRSLFNT
72a	SEELKSLYNTV
72b	SEELRSLYNTV
72c	SEELKSLFNTV
72d	SEELRSLFNTV
72e	SEELKSLYNTI
72f	SEELRSLYNTI
73a	EELKSLYNTVA
73b	EELRSLYNTVA
73c	EELKSLFNTVA
73d	EELRSLFNTVA
73e	EELKSLYNTIA
73f	EELRSLYNTIA
74a	ELKSLYNTVAT
74b	ELKSLYNTIAV
74c	ELKSLYNTVAV
74d	ELRSLYNTVAT
74e	ELKSLFNTVAT
74f	ELRSLFNTVAT
307c	EQATQEVKNWM
308a	QASQEVKNWMT
308b	QASQDVKNWMT
308c	QATQEVKNWMT
309a	ASQEVKNWMTE
309b	ASQDVKNWMTE
309c	ATQEVKNWMTE
310a	SQEVKNWMTET
310b	SQDVKNWMTET
310c	TQEVKNWMTET
311a	QEVKNWMTETL
311b	QDVKNWMTETL
312a	EVKNWMTETLL
312b	DVKNWMTETLL
313	VKNWMTETLLV
314	KNWMTETLLVQ
315	NWMTETLLVQN
316a	WMTETLLVQNA
316b	WMTETLLVQNS
317a	MTETLLVQNAN
317b	MTETLLVQNSN
318a	TETLLVQNANP
318b	TETLLVQNSNP
319a	ETLLVQNANPD
319b	ETLLVQNSNPD
320a	TLLVQNANPDC
320b	TLLVQNSNPDC
321a	LLVQNANPDCK
321b	LLVQNSNPDCK
322a	LVQNANPDCKT
322b	LVQNSNPDCKT
323a	VQNANPDCKTI
323b	VQNSNPDCKTI
324a	QNANPDCKTIL
324b	QNSNPDCKTIL
325a	NANPDCKTILK
325b	NSNPDCKTILK
326a	ANPDCKTILKA
326b	SNPDCKTILKA
327	NPDCKTILKAL
328	PDCKTILKALG
329	DCKTILKALGP
330a	CKTILKALGPA
330b	CKTILKALGPG
331a	KTILKALGPAA
331b	KTILKALGPGA
332a	TILKALGPAAT
332b	TILKALGPGAT
333a	ILKALGPAATL
333b	ILKALGPGATL
334a	LKALGPAATLE

Supplemental Table 1: Peptides and variants tested.

75a	LKSLYNTVATL
75b	LRSLYNTVATL
75c	LKSLFNTVATL
75d	LKSLYNTVAVL
75e	LKSLYNTIAVL
75f	LRSLFNTVATL
76a	RSLYNTVATLY
76b	KSLYNTVATLY
76c	KSLFNTVATLY
76d	KSLYNTVAVLY
76e	RSLFNTVATLY
76f	RSLYNTVAVLY
76g	KSLYNTIAVLY
77a	SLYNTVATLYC
77b	SLFNTVATLYC
77c	SLYNTVAVLYC
77d	SLYNTIAVLYC
77e	SLFNTVAVLYC
77f	SLYNTIATLYC
78a	LYNTVATLYCV
78b	LFNTVATLYCV
78c	LYNTVAVLYCV
78d	LYNTIAVLYCV
78e	LFNTVAVLYCV
78f	LYNTIATLYCV
79a	YNTVATLYCVH
79b	FNTVATLYCVH
79c	YNTVAVLYCVH
79d	YNTIAVLYCVH
79e	FNTVAVLYCVH
79f	YNTIATLYCVH
80a	NTVATLYCVHQ
80b	NTVAVLYCVHQ
80c	NTIAVLYCVHQ
80d	NTIATLYCVHQ
81a	TVATLYCVHQR
81b	TVATLYCVHQK
81c	TVAVLYCVHQR
81d	TIAVLYCVHQR
81e	TVAVLYCVHQK
82a	VATLYCVHQRI
82b	VATLYCVHQKI
82c	VAVLYCVHQRI
82d	IAVLYCVHQRI
82e	VAVLYCVHQKI
83a	ATLYCVHQRIE
83b	ATLYCVHQKIE
83c	AVLYCVHQRIE
83d	ATLYCVHQRID
83e	ATLYCVHQKID
83f	AVLYCVHQRID

334b	LKALGPGATLE
335a	KALGPAATLEE
335b	KALGPGATLEE
336a	ALGPAATLEEM
336b	ALGPGATLEEM
337a	LGPAATLEEMM
337b	LGPGATLEEMM
338a	GPAATLEEMMT
338b	GPGATLEEMMT
339a	PAATLEEMMTA
339b	PGATLEEMMTA
340a	AATLEEMMTAC
340b	GATLEEMMTAC
341	ATLEEMMTACQ
342	TLEEMMTACQG
343	LEEMMTACQGV
344	EEMMTACQGVG
345	EMMTACQGVGG
346	MMTACQGVGGP
347a	MTACQGVGGPG
347b	MTACQGVGGPS
348a	TACQGVGGPGH
348b	TACQGVGGPSH
349a	ACQGVGGPGHK
349b	ACQGVGGPSHK
350a	CQGVGGPGHKA
350b	CQGVGGPSHKA
351a	QGVGGPGHKAR
351b	QGVGGPSHKAR
352a	GVGGPGHKARV
352b	GVGGPSHKARV
352c	GVGGPSHKARI
353a	VGGPGHKARVL
353b	VGGPSHKARVL
353c	VGGPSHKARIL
354a	GGPGHKARVLA
354b	GGPSHKARVLA
354c	GGPSHKARILA
355a	GPGHKARVLAE
355b	GPSHKARVLAE
355c	GPSHKARILAE
356a	PGHKARVLAEA
356b	PSHKARVLAEA
356c	PSHKARILAEA
357a	GHKARVLAEAM
357b	SHKARVLAEAM
357c	SHKARILAEAM
358a	HKARVLAEAMS
358b	HKARILAEAMS
359a	KARVLAEAMSQ
359b	KARILAEAMSQ

Supplemental Table 1: Peptides and variants tested.

83g	AVLYCVHQKIE
84a	TLYCVHQRIEI
84b	TLYCVHQRIDV
84c	TLYCVHQKIEV
84d	TLYCVHQKIDV
84e	VLYCVHQRIEV
84f	TLYCVHQRIEV
84g	VLYCVHQRIDV
85a	LYCVHQRIDVK
85b	LYCVHQRIEIK
85c	LYCVHQRIEVK
85d	LYCVHQKIEVK
85e	LYCVHQKIDVK
86a	YCVHQRIDVKD
86b	YCVHQRIEIKD
86c	YCVHQRIEVKD
86d	YCVHQKIEVKD
86e	YCVHQKIDVKD
87a	CVHQRIDVKDT
87b	CVHQRIEIKDT
87c	CVHQRIEVKDT
87d	CVHQKIEVKDT
87e	CVHQKIDVKDT
88a	VHQRIDVKDTK
88b	VHQRIEIKDTK
88c	VHQRIEVKDTK
88d	VHQKIEVKDTK
88e	VHQKIDVKDTK
89a	HQRIDVKDTKE
89b	HQRIEVKDTKE
89c	HQKIEVKDTKE
89d	HQKIDVKDTKE
89e	HQRIEIKDTKE
90a	QRIDVKDTKEA
90b	QRIEVKDTKEA
90c	QKIEVKDTKEA
90d	QKIDVKDTKEA
90e	QRIEIKDTKEA
91a	RIDVKDTKEAL
91b	RIEVKDTKEAL
91c	KIEVKDTKEAL
91d	KIDVKDTKEAL
91e	RIEIKDTKEAL
92a	IDVKDTKEALD
92b	IEVKDTKEALD
92c	IEVKDTKEALE
92d	IDVKDTKEALE
92e	IEIKDTKEALD
92f	IEIKDTKEALE
93a	EVKDTKEALDK
93b	DVKDTKEALDK

360a	ARVLAEAMSQV
360b	ARVLAEAMSQA
360c	ARILAEAMSQV
361a	RVLAEAMSQVT
361b	RVLAEAMSQAT
361c	RILAEAMSQVT
361d	RVLAEAMSQTS
362a	VLAEAMSQVTN
362b	VLAEAMSQATN
362c	ILAEAMSQVTN
362d	VLAEAMSQVTS
363a	LAEAMSQVTNS
363b	LAEAMSQVTNP
364a	AEAMSQVTNSA
364b	AEAMSQVTNPA
365	EAMSQVTNSAT
366	AMSQVTNSATI
367	MSQVTNSATIM
368	SQVTNSATIMM
369	QVTNSATIMMQ
370a	VTNSATIMMQR
370b	VTNSATIMMQK
371a	TNSATIMMQRG
371b	TNSATIMMQKG
372a	NSATIMMQRGN
372b	NSATIMMQKGN
373a	SATIMMQRGNF
373b	SATIMMQKGNF
374a	ATIMMQRGNFR
374b	ATIMMQKGNFR
375a	TIMMQRGNFRN
375b	TIMMQKGNFRN
375c	AIMMQRGNFRN
376a	IMMQRGNFRNQ
376b	IMMQKGNFRNQ
376c	IMMQRGNFKNQ
376d	VMMQRGNFRNQ
377a	MMQRGNFRNQR
377b	MMQKGNFRNQR
377c	MMQRGNFKNQR
378a	MQRGNFRNQRK
378b	MQKGNFRNQRK
378c	MQRGNFKNQRK
379a	QRGNFRNQRKT
379b	QRGNFRNQRKI
379c	QKGNFRNQRKT
380a	RGNFRNQRKTV
380b	RGNFRNQRKIV
380c	KGNFRNQRKTV
381a	GNFRNQRKTVK
381b	GNFRNQRKIVK

Supplemental Table 1: Peptides and variants tested.

93c	EIKDTKEALDK
93d	EVKDTKEALEK
93e	DVKDTKEALEK
93f	EIKDTKEALEK
94a	VKDTKEALDKI
94b	IKDTKEALDKI
94c	VKDTKEALEKI
94d	VRDTKEALDKI
94e	IKDTKEALEKI
95a	KDTKEALDKIE
95b	KDTKEALEKIE
95c	RDTKEALDKIE
96a	DTKEALDKIEE
96b	DTKEALEKIEE
97a	TKEALDKIEEE
97b	TKEALEKIEEE
98a	KEALDKIEEEQ
98b	KEALEKIEEEQ
99a	EALDKIEEEQN
99b	EALEKIEEEQN
100a	ALDKIEEEQNK
100b	ALEKIEEEQNK
101a	LDKIEEEQNKS
101b	LEKIEEEQNKS
102a	DKIEEEQNKSK
102b	EKIEEEQNKSK
103a	KIEEEQNKSKK
103b	KVEEEQNKSKK
104a	IEEEQNKSKKK
104b	VEEEQNKSKKK
105a	EEEQNKSKKKA
105b	EEEQNKCKKKA
106a	EEQNKSKKKAQ
106b	EEQNKCKKKAQ
107	EQNKSKKKAQQ
108	QNKSKKKAQQA
109	NKSKKKAQQAA
110	KSKKKAQQAAA
111	SKKKAQQAAAD
112	KKKAQQAAADT
113	KKAQQAAADTG
114a	KAQQAAADTGN
114b	KAQQAAADTGH
115a	AQQAAADTGNS
115b	AQQAAADTGNN
115c	AQQAAADTGHS
116a	QQAAADTGNSS
116b	QQAAADTGHSS
117a	QAAADTGNSSQ
117b	QAAADTGHSSQ
118a	AAADTGNSSQV

382a	NFRNQRKTVKC
382b	NFRNQRKIVKC
383a	FRNQRKTVKCF
383b	FRNQRKIVKCF
384a	RNQRKTVKCFN
384b	RNQRKIVKCFN
385a	NQRKTVKCFNC
385b	NQRKIVKCFNC
386a	QRKTVKCFNCG
386b	QRKIVKCFNCG
386c	QRKPVKCFNCG
387a	RKTVKCFNCGK
387b	RKIVKCFNCGK
387c	RKPVKCFNCGK
388a	KTVKCFNCGKE
388b	KIVKCFNCGKE
389a	TVKCFNCGKEG
389b	IVKCFNCGKEG
389c	TIKCFNCGKEG
389d	PVKCFNCGKEG
390a	VKCFNCGKEGH
390b	IKCFNCGKEGH
390c	VKCFNCGREGH
391a	KCFNCGKEGHI
391b	KCFNCGKEGHL
391c	KCFNCGREGHI
392a	CFNCGKEGHIA
392b	CFNCGKEGHLA
392c	CFNCGREGHIA
393a	FNCGKEGHIAR
393b	FNCGKEGHIAK
393c	FNCGKEGHLAR
394a	NCGKEGHIARN
394b	NCGKEGHIAKN
394c	NCGKEGHLARN
395a	CGKEGHIARNC
395b	CGKEGHIAKNC
395c	CGKEGHLARNC
396a	GKEGHIARNCR
396b	GKEGHIAKNCR
396c	GKEGHLARNCR
397a	KEGHIARNCRA
397b	KEGHIAKNCRA
397c	KEGHLARNCRA
398a	EGHIARNCRAP
398b	EGHIAKNCRAP
398c	EGHLARNCRAP
399a	GHIARNCRAPR
399b	GHIAKNCRAPR
399c	GHLARNCRAPR
400a	HIARNCRAPRK

Supplemental Table 1: Peptides and variants tested.

118b	AAADTGHSSQV
119a	AADTGNSSQVS
119b	AADTGNNSQVS
119c	AADTGHSSQVS
120a	ADTGNSSQVSQ
120b	ADTGNNSQVSQ
120c	ADTGHSSQVSQ
121a	DTGNSSQVSQN
121b	DTGNNSQVSQN
121c	DTGHSSQVSQN
122a	TGNSSQVSQNY
122b	TGNNSQVSQNY
122c	TGHSSQVSQNY
123a	GNSSQVSQNYP
123b	GNNSQVSQNYP
123c	GHSSQVSQNYP
124a	NSSQVSQNYPI
124b	NNSQVSQNYPI
124c	HSSQVSQNYPI
125a	SSQVSQNYPIV
125b	NSQVSQNYPIV
126a	SQVSQNYPIVQ
126b	NQVSQNYPIVQ
127	QVSQNYPIVQN
128a	VSQNYPIVQNL
128b	VSQNYPIVQNI
128c	VSQNYPIVQNM
129a	SQNYPIVQNLQ
129b	SQNYPIVQNIQ
129c	SQNYPIVQNMQ
130a	QNYPIVQNLQG
130b	QNYPIVQNIQG
130c	QNYPIVQNMQG
131a	NYPIVQNLQGQ
131b	NYPIVQNIQGQ
131c	NYPIVQNMQGQ
132a	YPIVQNLQGQM
132b	YPIVQNIQGQM
132c	YPIVQNMQGQM
133a	PIVQNLQGQMV
133b	PIVQNIQGQMV
133c	PIVQNMQGQMV
134a	IVQNLQGQMVH
134b	IVQNIQGQMVH
134c	IVQNMQGQMVH
135a	VQNLQGQMVHQ
135b	VQNIQGQMVHQ
135c	VQNMQGQMVHQ
136a	QNLQGQMVHQA
136b	QNLQGQMVHQP
136c	QNIQGQMVHQA

400b	HIAKNCRAPRK
400c	HLARNCRAPRK
401a	IARNCRAPRKK
401b	IAKNCRAPRKK
401c	IAKNCRAPRKR
401d	IARNCRAPRKR
402a	ARNCRAPRKKG
402b	AKNCRAPRKKG
402c	AKNCRAPRKRG
402d	ARNCRAPRKRG
403a	RNCRAPRKKGC
403b	KNCRAPRKKGC
403c	KNCRAPRKRGC
403d	RNCRAPRKRGC
404a	NCRAPRKKGCW
404b	NCRAPRKRGCW
405a	CRAPRKKGCWK
405b	CRAPRKRGCWK
406a	RAPRKKGCWKC
406b	RAPRKRGCWKC
407a	APRKKGCWKCG
407b	APRKRGCWKCG
408a	PRKKGCWKCGK
408b	PRKRGCWKCGK
408c	PRKKGCWKCGR
409a	RKKGCWKCGKE
409b	RKRGCWKCGKE
409c	RKKGCWKCGRE
410a	KKGCWKCGKEG
410b	KRGCWKCGKEG
410c	KKGCWKCGREG
411a	KGCWKCGKEGH
411b	KGCWKCGREGH
411c	RGCWKCGKEGH
412a	GCWKCGKEGHQ
412b	GCWKCGREGHQ
412c	GCWKCGQEGHQ
413a	CWKCGKEGHQM
413b	CWKCGREGHQM
413c	CWKCGQEGHQM
414a	WKCGKEGHQMK
414b	WKCGREGHQMK
414c	WKCGQEGHQMK
415a	KCGKEGHQMKD
415b	KCGREGHQMKD
415c	KCGKEGHQMKE
415d	KCGQEGHQMKD
416a	CGKEGHQMKDC
416b	CGREGHQMKDC
416c	CGKEGHQMKEC
416d	CGQEGHQMKDC

Supplemental Table 1: Peptides and variants tested.

136d	QNMQGQMVHQA
137a	NLQGQMVHQAI
137b	NLQGQMVHQPI
137c	NIQGQMVHQAI
137d	NLQGQMVHQAL
137e	NMQGQMVHQAI
138a	LQGQMVHQAIS
138b	LQGQMVHQPIS
138c	IQGQMVHQAIS
138d	LQGQMVHQALS
138e	MQGQMVHQAIS
139a	QGQMVHQAISP
139b	QGQMVHQPISP
139c	QGQMVHQALSP
139d	QGQMVHQPLSP
140a	GQMVHQAISPR
140b	GQMVHQPISPR
140c	GQMVHQALSPR
140d	GQMVHQPLSPR
141a	QMVHQAISPRT
141b	QMVHQPISPRT
141c	QMVHQALSPRT
141d	QMVHQPLSPRT
142a	MVHQAISPRTL
142b	MVHQPISPRTL
142c	MVHQALSPRTL
142d	MVHQPLSPRTL
143a	VHQAISPRTLN
143b	VHQPISPRTLN
143c	VHQALSPRTLN
143d	VHQPLSPRTLN
144a	HQAISPRTLNA
144b	HQPISPRTLNA
144c	HQALSPRTLNA
144d	HQPLSPRTLNA
145a	QAISPRTLNAW
145b	QPISPRTLNAW
145c	QALSPRTLNAW
145d	QPLSPRTLNAW
146a	AISPRTLNAWV
146b	PISPRTLNAWV
146c	ALSPRTLNAWV
146d	PLSPRTLNAWV
147a	ISPRTLNAWVK
147b	LSPRTLNAWVK
148	SPRTLNAWVKV
149a	PRTLNAWVKVV
149b	PRTLNAWVKVI
150a	RTLNAWVKVVE
150b	RTLNAWVKVIE
417a	GKEGHQMKDCT
417b	GREGHQMKDCT
417c	GKEGHQMKECT
417d	GQEGHQMKDCT
418a	KEGHQMKDCTE
418b	REGHQMKDCTE
418c	KEGHQMKECTE
419a	EGHQMKDCTER
419b	EGHQMKECTER
420a	GHQMKDCTERQ
420b	GHQMKECTERQ
421a	HQMKDCTERQA
421b	HQMKECTERQA
422a	QMKDCTERQAN
422b	QMKECTERQAN
423a	MKDCTERQANF
423b	MKECTERQANF
424a	KDCTERQANFL
424b	KECTERQANFL
425a	DCTERQANFLG
425b	ECTERQANFLG
426	CTERQANFLGK
427	TERQANFLGKI
428	ERQANFLGKIW
429	RQANFLGKIWP
430	QANFLGKIWPS
431a	ANFLGKIWPSH
431b	ANFLGKIWPSY
432a	NFLGKIWPSHK
432b	NFLGKIWPSYK
433a	FLGKIWPSHKG
433b	FLGKIWPSYKG
434a	LGKIWPSHKGR
434b	LGKIWPSYKGR
435a	GKIWPSHKGRP
435b	GKIWPSYKGRP
436a	KIWPSHKGRPG
436b	KIWPSYKGRPG
437a	IWPSHKGRPGN
437b	IWPSYKGRPGN
438a	WPSHKGRPGNF
438b	WPSYKGRPGNF
439a	PSHKGRPGNFL
439b	PSYKGRPGNFL
440a	SHKGRPGNFLQ
440b	SYKGRPGNFLQ
441a	HKGRPGNFLQS
441b	YKGRPGNFLQS
441c	HKGRPGNFLQN
442a	KGRPGNFLQSR

Supplemental Table 1: Peptides and variants tested.

151a	TLNAWVKVVEE
151b	TLNAWVKVIEE
152a	LNAWVKVVEEK
152b	LNAWVKVIEEK
153a	NAWVKVVEEKA
153b	NAWVKVIEEKA
154a	AWVKVVEEKAF
154b	AWVKVIEEKAF
155a	WVKVVEEKAFS
155b	WVKVIEEKAFS
156a	VKVVEEKAFSP
156b	VKVIEEKAFSP
157a	KVVEEKAFSPE
157b	KVIEEKAFSPE
158a	VVEEKAFSPEV
158b	VIEEKAFSPEV
159a	VEEKAFSPEVI
159b	IEEKAFSPEVI
160	EEKAFSPEVIP
161	EKAFSPEVIPM
162	KAFSPEVIPMF
163a	AFSPEVIPMFS
163b	AFSPEVIPMFT
164a	FSPEVIPMFSA
164b	FSPEVIPMFTA
165a	SPEVIPMFSAL
165b	SPEVIPMFTAL
166a	PEVIPMFSALS
166b	PEVIPMFTALS
166c	PEVIPMFAALS
167a	EVIPMFSALSE
167b	EVIPMFTALSE
167c	EVIPMFAALSE
168a	VIPMFSALSEG
168b	VIPMFTALSEG
168c	VIPMFAALSEG
169a	IPMFSALSEGA
169b	IPMFTALSEGA
169c	IPMFAALSEGA
170a	PMFSALSEGAT
170b	PMFTALSEGAT
170c	PMFAALSEGAT
171a	MFSALSEGATP
171b	MFTALSEGATP
171c	MFAALSEGATP
172a	FSALSEGATPQ
172b	FTALSEGATPQ
172c	FAALSEGATPQ
172d	FSALAEGATPQ
173a	SALSEGATPQD
173b	TALSEGATPQD

442b	KGRPGNFLQNR
443a	GRPGNFLQSRP
443b	GRPGNFLQNRP
444a	RPGNFLQSRPE
444b	RPGNFLQNRPE
445a	PGNFLQSRPEP
445b	PGNFLQNRPEP
446a	GNFLQSRPEPT
446b	GNFLQSRPEPS
446c	GNFLQNRPEPT
447a	NFLQSRPEPTA
447b	NFLQSRPEPSA
447c	NFLQNRPEPTA
448a	FLQSRPEPTAP
448b	FLQSRPEPSAP
448c	FLQNRPEPTAP
449a	LQSRPEPTAPP
449b	LQSRPEPSAPP
449c	LQNRPEPTAPP
450a	QSRPEPTAPPE
450b	QSRPEPTAPPA
450c	QSRPEPSAPPE
450d	QNRPEPTAPPE
451a	SRPEPTAPPEE
451b	SRPEPTAPPAE
451c	SRPEPSAPPEE
451d	NRPEPTAPPEE
452a	RPEPTAPPEES
452b	RPEPSAPPEES
452c	RPEPTAPPAES
453a	PEPTAPPEESF
453b	PEPSAPPEESF
453c	PEPTAPPAESF
454a	EPTAPPEESFR
454b	EPSAPPEESFR
454c	EPTAPPAESFR
455a	PTAPPEESFRF
455b	PSAPPEESFRF
455c	PTAPPAESFRF
455d	PTAPPEESFRS
456a	TAPPEESFRFG
456b	SAPPEESFRFG
456c	TAPPAESFRFG
456d	TAPPEESFRSG
457a	APPEESFRFGE
457b	APPAESFRFGE
457c	APPEESFRSGV
458a	PPEESFRFGEE
458b	PPAESFRFGEE
458c	PPEESFRSGVE
459a	PEESFRFGEET

Supplemental Table 1: Peptides and variants tested.

173c	AALSEGATPQD
174a	ALSEGATPQDL
174b	ALAEGATPQDL
175a	LSEGATPQDLN
175b	LAEGATPQDLN
176	SEGATPQDLNT
177	EGATPQDLNTM
178	GATPQDLNTML
179	ATPQDLNTMLN
180	TPQDLNTMLNT
181	PQDLNTMLNTV
182	QDLNTMLNTVG
183	DLNTMLNTVGG
184	LNTMLNTVGGH
185	NTMLNTVGGHQ
186	TMLNTVGGHQA
187	MLNTVGGHQAA
188	LNTVGGHQAAM
189	NTVGGHQAAMQ
190	TVGGHQAAMQM
191	VGGHQAAMQML
192	GGHQAAMQMLK
193	GHQAAMQMLKE
194	HQAAMQMLKET
195	QAAMQMLKETI
196a	AAMQMLKETIN
196b	AAMQMLKDTIN
197a	AMQMLKETINE
197b	AMQMLKDTINE
198a	MQMLKETINEE
198b	MQMLKDTINEE
199a	QMLKETINEEA
199b	QMLKDTINEEA
200a	MLKETINEEAA
200b	MLKDTINEEAA
201a	LKETINEEAAE
201b	LKDTINEEAAE
202a	KETINEEAAEW
202b	KDTINEEAAEW
203a	ETINEEAAEWD
203b	DTINEEAAEWD
204	TINEEAAEWDR
205a	INEEAAEWDRL
205b	INEEAAEWDRV
206a	NEEAAEWDRLH
206b	NEEAAEWDRVH
207a	EEAAEWDRLHP
207b	EEAAEWDRVHP
208a	EAAEWDRLHPV
459b	PAESFRFGEET
459c	PEESFRSGVET
460a	EESFRFGEETT
460b	EESFRFGEETA
460c	AESFRFGEETT
460d	EESFRSGVETT
461a	ESFRFGEETTT
461b	ESFRFGEETAT
461c	ESFRSGVETTT
462a	SFRFGEETTTP
462b	SFRFGEETATP
462c	SFRSGVETTTP
463a	FRFGEETTTPS
463b	FRFGEETTTPP
463c	FRFGEETATPP
464a	RFGEETTTPSQ
464b	RFGEETTTPPQ
464c	RFGEETATPPQ
465a	FGEETTTPSQK
465b	FGEETTTPPQK
465c	FGEETATPPQK
466a	GEETTTPSQKQ
466b	GEETTTPPQKQ
466c	GEETATPPQKQ
467a	EETTTPSQKQE
467b	EETTTPPQKQE
468a	ETTTPSQKQEP
468b	ETTTPPQKQEP
469a	TTTPSQKQEPI
469b	TTTPPQKQEPI
470a	TTPSQKQEPID
470b	TTPPQKQEPID
471a	TPSQKQEPIDK
471b	TPPQKQEPIDK
472a	PSQKQEPIDKE
472b	PPQKQEPIDKE
473a	SQKQEPIDKEL
473b	PQKQEPIDKEL
474	QKQEPIDKELY
475	KQEPIDKELYP
476	QEPIDKELYPL
477a	EPIDKELYPLA
477b	EPIDKELYPLT
478a	PIDKELYPLAS
478b	PIDKELYPLTS
479a	IDKELYPLASL
479b	IDKELYPLTSL
480a	DKELYPLASLK
480b	DKELYPLASLR

Supplemental Table 1: Peptides and variants tested.

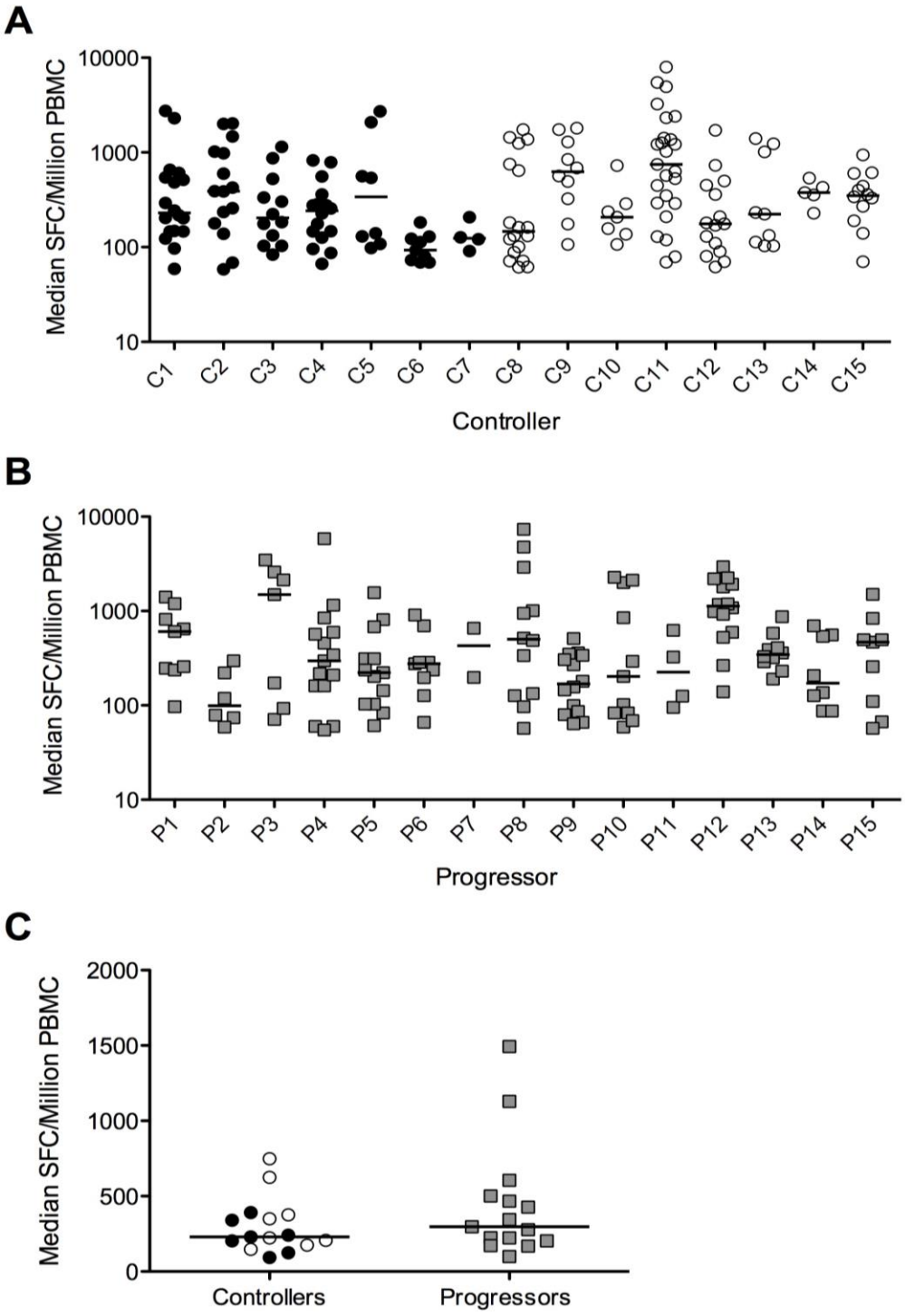
208b	EAAEWDRVHPV
209a	AAEWDRLHPVH
209b	AAEWDRLHPVQ
209c	AAEWDRVHPVH
210a	AEWDRLHPVHA
210b	AEWDRLHPVQA
210c	AEWDRVHPVHA
211a	EWDRLHPVHAG
211b	EWDRLHPVQAG
211c	EWDRVHPVHAG
212a	WDRLHPVHAGP
212b	WDRLHPVQAGP
212c	WDRVHPVHAGP
213a	DRLHPVHAGPI
213b	DRLHPVHAGPV
213c	DRLHPVQAGPV
213d	DRVHPVHAGPI
214a	RLHPVHAGPIA
214b	RLHPVHAGPVA
214c	RLHPVQAGPVA
214d	RVHPVHAGPIA
215a	LHPVHAGPIAP
215b	LHPVHAGPVAP
215c	LHPVQAGPVAP
215d	VHPVHAGPIAP
216a	HPVHAGPIAPG
216b	HPVHAGPVAPG
216c	HPVQAGPVAPG
217a	PVHAGPIAPGQ
217b	PVHAGPVAPGQ
217c	PVQAGPVAPGQ
218a	VHAGPIAPGQM
218b	VHAGPVAPGQM
218c	VQAGPVAPGQM
219a	HAGPIAPGQMR
219b	HAGPVAPGQMR
219c	QAGPVAPGQMR
219d	QAGPIAPGQIR
220a	AGPIAPGQMRE
220b	AGPVAPGQMRE
220c	AGPVAPGQMRD
220d	AGPIAPGQIRE
221a	GPIAPGQMREP
221b	GPVAPGQMREP
221c	GPVAPGQMRDP
221d	GPIAPGQIREP

480c	DKELYPLTSLR
481a	KELYPLASLKS
481b	KELYPLASLRS
481c	KELYPLTSLRS
482a	ELYPLASLKSL
482b	ELYPLASLRSL
482c	ELYPLTSLRSL
483a	LYPLASLKSLF
483b	LYPLASLRSLF
483c	LYPLTSLRSLF
483d	LYPLTSLKSLF
484a	YPLASLRSLFG
484b	YPLASLKSLFG
484c	YPLTSLRSLFG
484d	YPLTSLKSLFG
485a	PLASLRSLFGN
485b	PLASLKSLFGN
485c	PLTSLRSLFGN
485d	PLASLKSLFGS
485e	PLTSLKSLFGN
486a	LASLRSLFGND
486b	LASLKSLFGND
486c	LTSLRSLFGND
486d	LASLKSLFGSD
486e	LTSLKSLFGND
487a	ASLRSLFGNDP
487b	ASLKSLFGNDP
487c	TSLRSLFGNDP
487d	ASLKSLFGSDP
487e	TSLKSLFGNDP
488a	SLRSLFGNDPS
488b	SLKSLFGNDPS
488c	SLKSLFGSDPS
488d	SLKSLFGNDPL
488e	SLRSLFGNDPL
489a	LRSLFGNDPSS
489b	LKSLFGNDPSS
489c	LRSLFGNDPLS
490a	RSLFGNDPSSQ
490b	KSLFGNDPSSQ
490c	RSLFGNDPLSQ

Supplemental Table 2: Example of Data Analysis

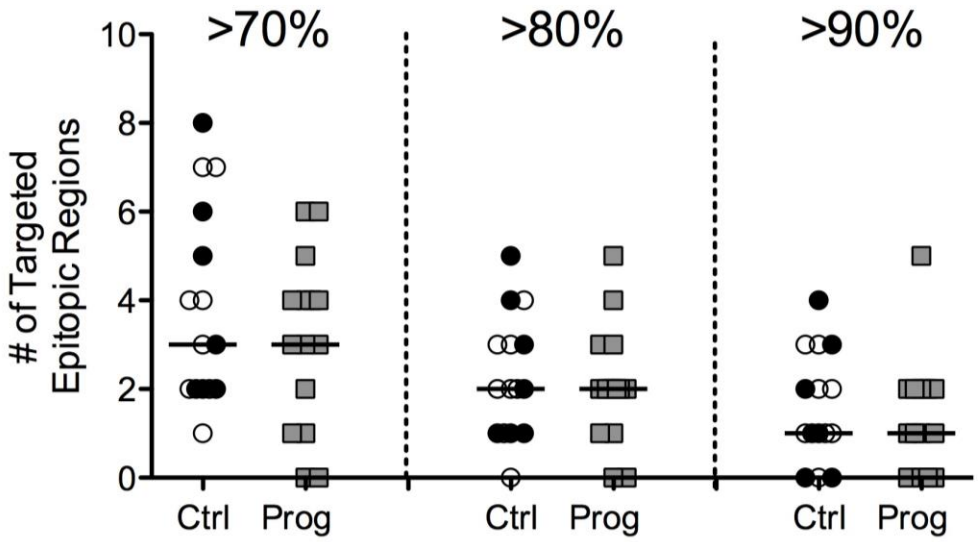
Epitope ID	IFN-γ SFC/M	IL-2 SFC/M	DUAL SFC/M	11mer peptide		11mer Frequency
145a	770	---	---	**QAISPRTLNAW**		**53.10%**
145b	---	---	---	QPISPRTLNAW		17.49%
145c	1050	---	---	**QALSPRTLNAW**		**14.02%**
145d	---	---	---	QPLSPRTLNAW		5.96%
		# Variants Recognized		2	Sum Frequency of Recognized Variants	67.12%
		# Variants Tested		4	Sum Frequency of Tested Variants	90.57%
		% Variant Recognition		50%	% Coverage of frequently occurring variants	74.10%

SFC/M=Spot forming Cells/Million PBMC

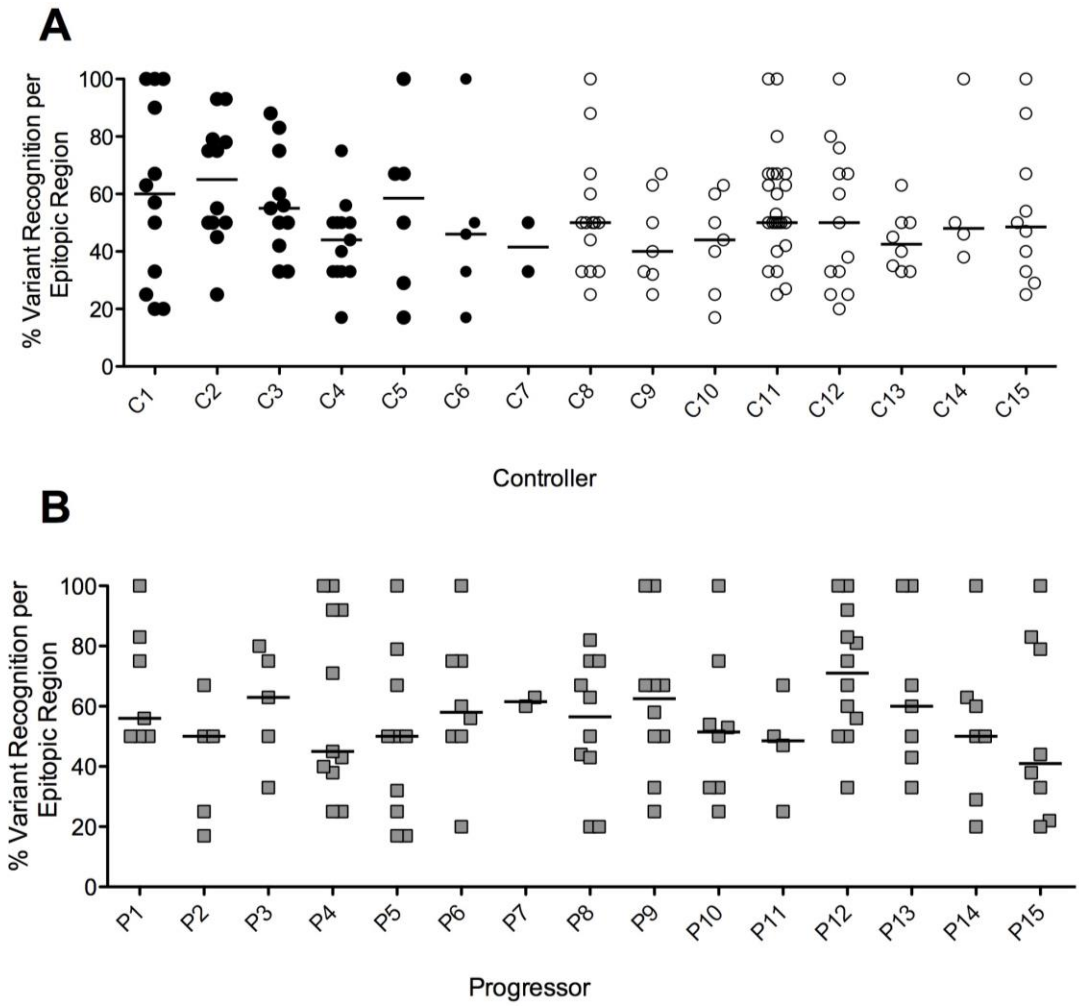


Supplemental Figure 1: No significant differences in response magnitude between controllers and progressors. We represented response magnitude (SFC/Million PBMC) by reporting the highest response magnitude to an 11mer peptide

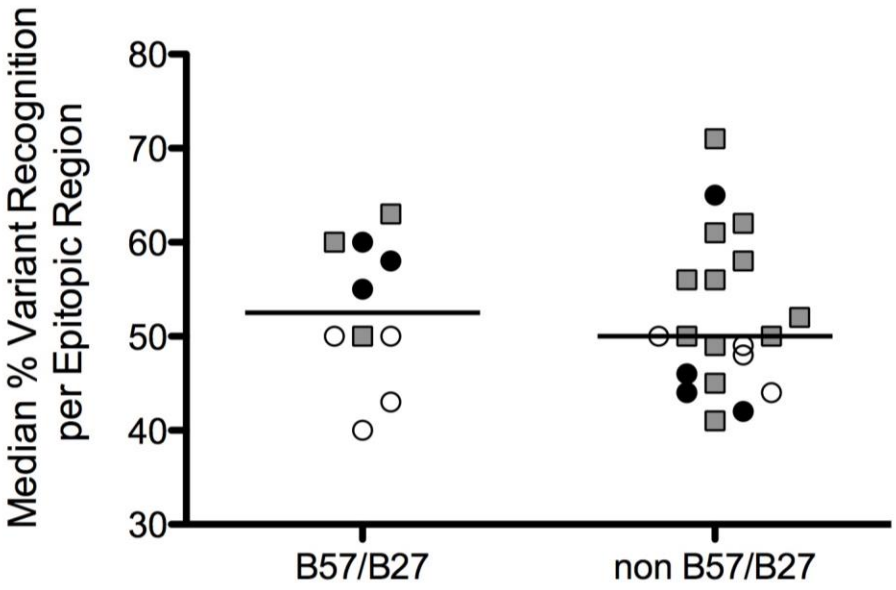
within the targeted epitopic region for A) EC (black circles) and VC (open circles) and B) Progressors (grey squares). C) For each study subject, the median response magnitude was calculated across all targeted epitopic regions and compared between controllers and progressors (p=0.36).



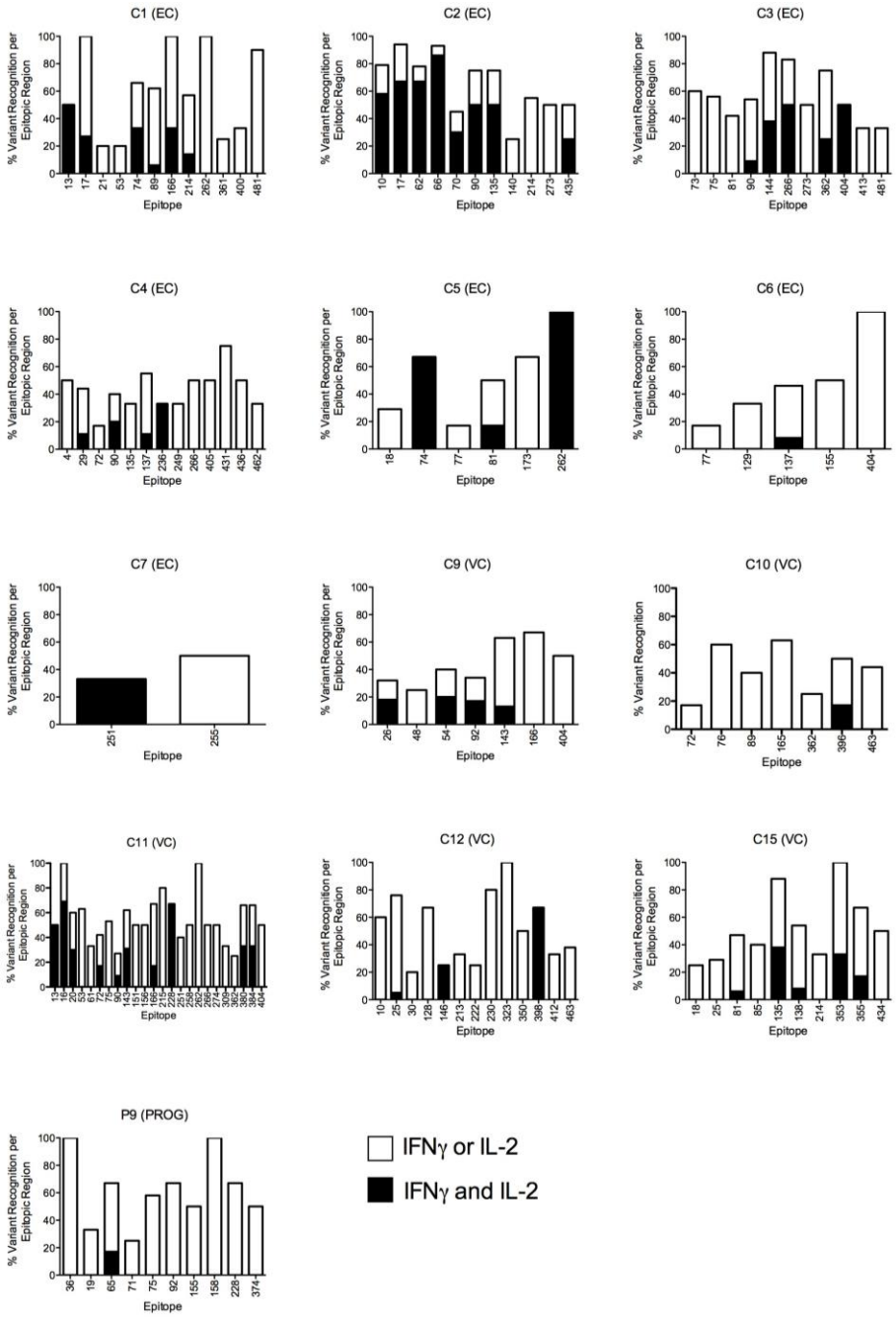
Supplemental Figure 2: Controllers and progressors similarly targeted conserved epitopes. Conservation was assessed based on the frequency of a 11mer sequence in the clade B HIVDB sequence alignment used to design the peptide set. A response to a conserved epitopic region reflects the targeting of at least one conserved 11mer peptide within the targeted region. We found no significant differences in the targeting of conserved epitopic regions, regardless of whether the threshold for conservation was set at >70% (p=0.47), >80% (p=0.74) or >90% (p=0.60) of sequences in the alignment.



Supplemental Figure 3: Epitope variant recognition is extensive both within and between individuals. We determined the percent variant recognition by calculating the number of 11mer variants recognized out of the number of variants tested in each epitopic region for A) EC (black circles) and VC (open circles) and B) Progressors (grey squares). Lines represent median variant recognition across all targeted epitopic regions.

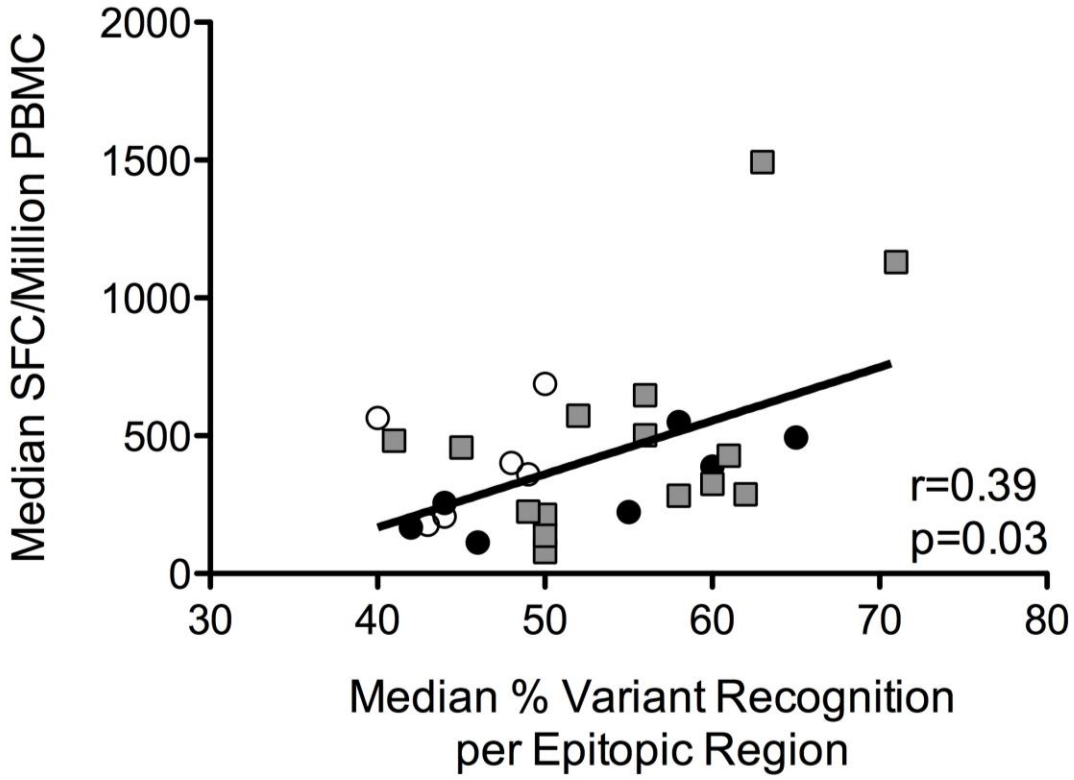


Supplemental Figure 4: Overall variant recognition is similar between individuals with and without B*27 and B*57 alleles. We observed no difference in median percent variant recognition between study subjects (EC black circles, VC open circles, and progressors grey squares) with and without B*27 and B*57 alleles (p=0.61). There is no difference between groups even if analysis is restricted to only controllers (p=0.45).

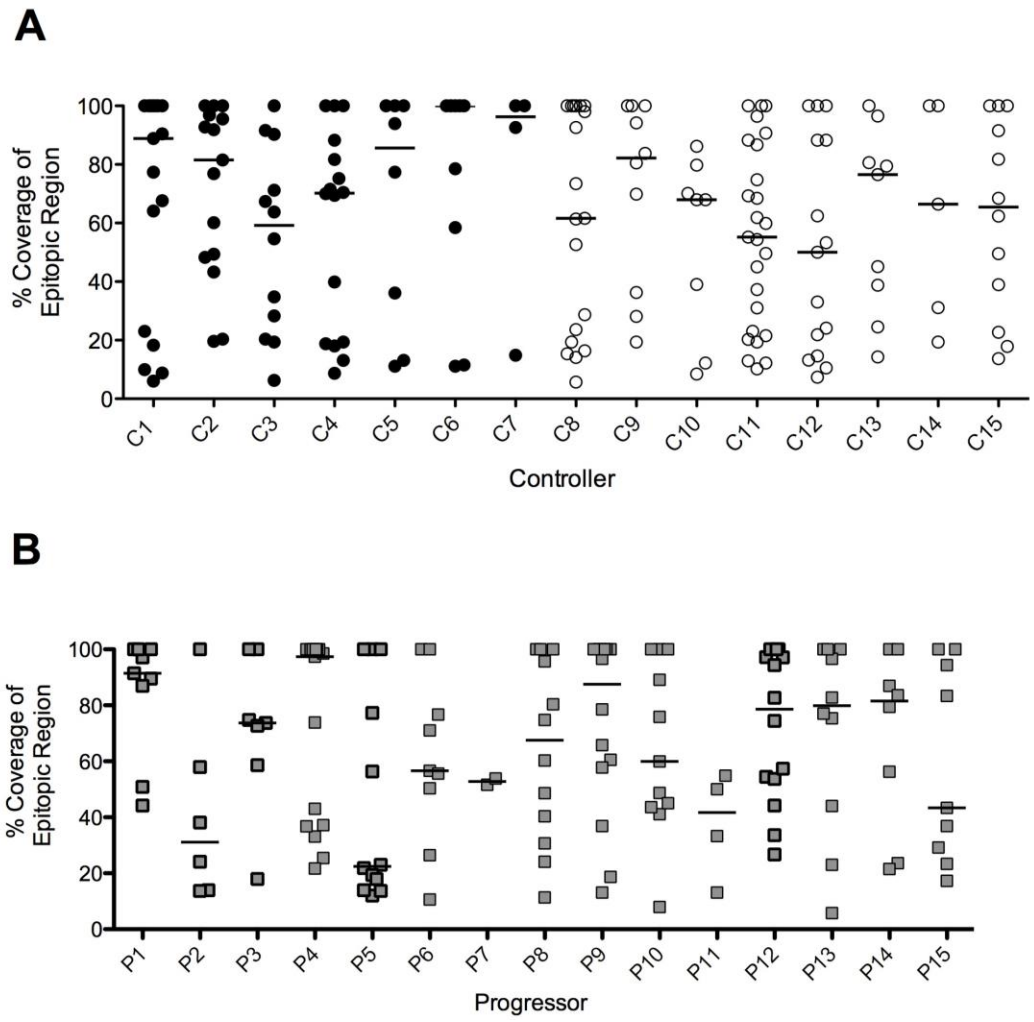


Supplemental Figure 5: Functionality changes upon variant recognition. In all study subjects who elicited a dual IFN-γ/IL-2 response in an epitopic region, we analyzed how functionality changes upon epitope variation. In each graph, the height of the bars reflect the overall variant recognition in a given targeted epitopic region. The proportion of variants that were recognized via a monofunctional (white, IFN-γ or IL-2)

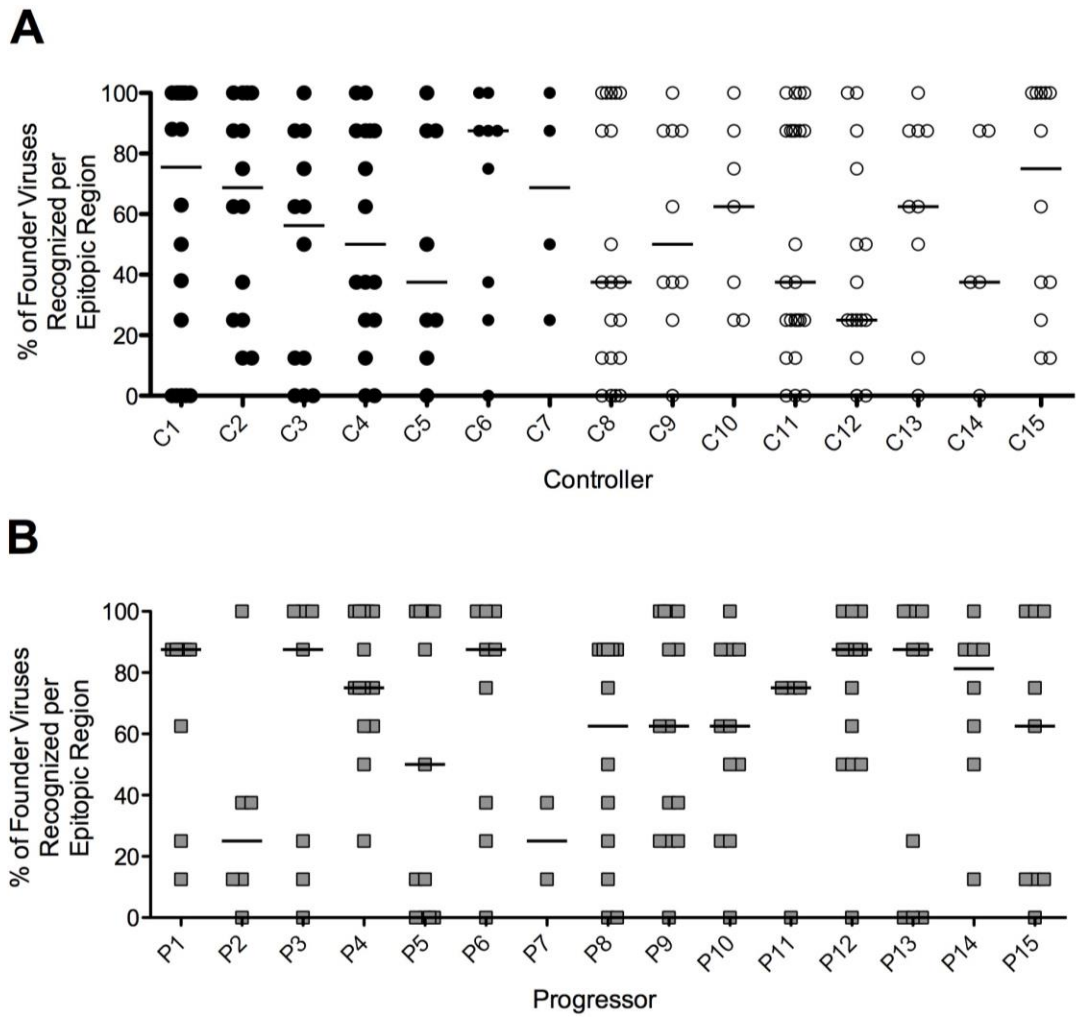
or a polyfunctional (black, IFN-γ and IL-2) response is indicated. Polyfunctional responses to all variants were uncommon.



Supplemental Figure 6: Response magnitude is associated with epitope variant recognition. Median variant recognition per subject for EC (black circles), VC (open circles) and progressors (grey squares) is shown in relation to median response magnitude (SFC/Million PBMC) of all targeted epitopic regions in which variant recognition was calculated.



Supplemental Figure 7: Sequence coverage for all epitopic regions targeted by controllers and progressors. We determined the sequence coverage for each targeted epitopic region by calculating the sum [frequency targeted 11mers] out of the sum [frequency of tested 11mers] where frequency refers to the proportion of the 11mer sequence in the clade B sequence alignment. Sequence coverage was calculated for A) EC (black circles) and VC (open circles) and B) Progressors (grey squares). Lines represent median coverage across all targeted epitopic regions.



Supplemental Figure 8: Recognition of founder viruses by controllers and progressors. We analyzed whether the recognized variants in each targeted epitopic region would match the sequences found in the founder virus panel (n=8). For example, if a person's recognized variants matched 6/8 founder viruses, then the overall recognition would be 75%. The proportion of founder viruses that would be recognized per epitopic region was calculated for A) EC (black circles) and VC (open circles) and B) Progressors (grey squares). Lines represent median percent of founder viruses recognized across all targeted epitopic regions.