

Table S1 15 genome sequences analyzed in this study

Strain	Size (Mb)	GC%	Accession	Reference
BCG-Moreau	4.16	65.4	AKYS000000000	16
BCG-Phipps	4.14	65.4	AKYT000000000	16
BCG-Sweden	4.09	65.3	AKYV000000000	16
BCG-Prague	4.13	65.3	AKYU000000000	16
BCG-Glaxo	4.21	65.4	AKYR000000000	16
BCG-Frappier	4.24	65.5	AKYQ000000000	16
BCG-China	4.18	65.3	AEZE000000000	17
BCG-Danish	4.17	65.3	AEZF000000000	17
BCG-Russia	4.18	65.3	AEZG000000000	17
BCG-Tice	4.17	65.3	AEZH000000000	17
BCG-Mexico	4.35	65.7	NC_016804	18
BCG-Pasteur	4.37	65.6	NC_008769	19
BCG-Tokyo 172	4.37	65.6	NC_012207	20
<i>Mycobacterium tuberculosis</i> H37Rv	4.41	65.6	NC_000962	21
<i>Mycobacterium bovis</i> AF2122/97	4.35	65.6	NC_002945	22

Table S2 399 B cell epitopes and coding genes

No.	Epitope ID	Coding Gene according to H37Rv	Coding Gene according to AF2122/97 gene	Epitope linear Sequence
1	103203	<i>Rv0066c</i>	<i>Mb0067c</i>	GELDNREGSQFYLAMV
2	103328	<i>Rv0066c</i>	<i>Mb0067c</i>	KTLDAAGKLLDNDK
3	103550	<i>Rv0066c</i>	<i>Mb0067c</i>	RIFYKDAFAKHQELF
4	103745	<i>Rv0066c</i>	<i>Mb0067c</i>	YEEQMQDAFETGVMF
5	103113	<i>Rv0125</i>	<i>Mb0130</i>	DRFADFPALPLDPSA
6	103680	<i>Rv0125</i>	<i>Mb0130</i>	TWQTKSGGTRTGNVT
7	103040	<i>Rv0169</i>	<i>Mb0175</i>	ALTGLGDKFGESIVN
8	103544	<i>Rv0251c</i>	<i>Mb0257c</i>	RGEHRDEHTQDAGDK
9	103580	<i>Rv0287</i>	<i>Mb0295</i>	SAFAAKAGLMRHTIG
10	38988	<i>Rv0288</i>	<i>Mb0296</i>	LQSLGAEIAVEQAAL
11	103042	<i>Rv0288</i>	<i>Mb0296</i>	AMEDLVRAYHAMSST
12	103043	<i>Rv0288</i>	<i>Mb0296</i>	AMMARDTAEAAKWGG
13	41952	<i>Rv0315</i>	<i>Mb0323</i>	MLGTGTPNRARINFNC
14	53107	<i>Rv0350</i>	<i>Mb0358</i>	RAGRCPPR
15	53303	<i>Rv0350</i>	<i>Mb0358</i>	RCPPRRRA
16	73020	<i>Rv0350</i>	<i>Mb0358</i>	WRCPPRRR
17	48905	<i>Rv0350</i>	<i>Mb0358</i>	PPRRRAGR
18	6825	<i>Rv0350</i>	<i>Mb0358</i>	CPPRRRAG
19	49246	<i>Rv0350</i>	<i>Mb0358</i>	PRRRRAGRC
20	55523	<i>Rv0350</i>	<i>Mb0358</i>	RRRAGRCPP
21	55706	<i>Rv0350</i>	<i>Mb0358</i>	RRRAGRCPP

22	63850	<i>Rv0350</i>	<i>Mb0358</i>	TGHWRCPP
23	25138	<i>Rv0350</i>	<i>Mb0358</i>	HWRCPPRR
24	61020	<i>Rv0350</i>	<i>Mb0358</i>	SSGCVTGH
25	20198	<i>Rv0350</i>	<i>Mb0358</i>	GHWRCPPR
26	61340	<i>Rv0350</i>	<i>Mb0358</i>	SSSGCVTG
27	55967	<i>Rv0350</i>	<i>Mb0358</i>	RSSSGCVT
28	71325	<i>Rv0350</i>	<i>Mb0358</i>	VTGHWRCP
29	7311	<i>Rv0350</i>	<i>Mb0358</i>	CVTGHWRC
30	819	<i>Rv0350</i>	<i>Mb0358</i>	AEAEGGTW
31	11021	<i>Rv0350</i>	<i>Mb0358</i>	EAEGGTWR
32	948	<i>Rv0350</i>	<i>Mb0358</i>	AEGGTWRI
33	1634	<i>Rv0350</i>	<i>Mb0358</i>	AGPGVAGS
34	1676	<i>Rv0350</i>	<i>Mb0358</i>	AGSGASDL
35	4364	<i>Rv0350</i>	<i>Mb0358</i>	ASDLRSSS
36	7474	<i>Rv0350</i>	<i>Mb0358</i>	DAAVAEAE
37	9268	<i>Rv0350</i>	<i>Mb0358</i>	DLRSSSGC
38	10406	<i>Rv0350</i>	<i>Mb0358</i>	DTLNKVDA
39	11057	<i>Rv0350</i>	<i>Mb0358</i>	EAGPGVAG
40	11451	<i>Rv0350</i>	<i>Mb0358</i>	EDTLNKVD
41	12182	<i>Rv0350</i>	<i>Mb0358</i>	EGGTWRIG
42	12688	<i>Rv0350</i>	<i>Mb0358</i>	EKFVKEQR
43	15991	<i>Rv0350</i>	<i>Mb0358</i>	FGHQVGDG
44	18764	<i>Rv0350</i>	<i>Mb0358</i>	GASDLRSS
45	19202	<i>Rv0350</i>	<i>Mb0358</i>	GEAGPGVA
46	20060	<i>Rv0350</i>	<i>Mb0358</i>	GGTWRIGY
47	20174	<i>Rv0350</i>	<i>Mb0358</i>	GHQVGDGE

48	21653	<i>Rv0350</i>	<i>Mb0358</i>	GPGVAGSG
49	22332	<i>Rv0350</i>	<i>Mb0358</i>	GSGASDLR
50	22398	<i>Rv0350</i>	<i>Mb0358</i>	GSKVPEDT
51	22912	<i>Rv0350</i>	<i>Mb0358</i>	GVAGSGAS
52	23337	<i>Rv0350</i>	<i>Mb0358</i>	GYFGHQVG
53	24658	<i>Rv0350</i>	<i>Mb0358</i>	HQVGDGEA
54	26348	<i>Rv0350</i>	<i>Mb0358</i>	IGYFGHQV
55	30877	<i>Rv0350</i>	<i>Mb0358</i>	KFVKEQRE
56	34154	<i>Rv0350</i>	<i>Mb0358</i>	KVPEDTLN
57	38259	<i>Rv0350</i>	<i>Mb0358</i>	LNKVDAAV
58	39216	<i>Rv0350</i>	<i>Mb0358</i>	LRSSSGCV
59	40649	<i>Rv0350</i>	<i>Mb0358</i>	LVYQTEKF
60	44613	<i>Rv0350</i>	<i>Mb0358</i>	NKVDAAVA
61	47260	<i>Rv0350</i>	<i>Mb0358</i>	PEDTLNKV
62	47769	<i>Rv0350</i>	<i>Mb0358</i>	PGVAGSGA
63	52501	<i>Rv0350</i>	<i>Mb0358</i>	QTEKFVKE
64	52698	<i>Rv0350</i>	<i>Mb0358</i>	QVGDGEAG
65	54157	<i>Rv0350</i>	<i>Mb0358</i>	RIGYFGHQ
66	57244	<i>Rv0350</i>	<i>Mb0358</i>	SDLRSSSG
67	57981	<i>Rv0350</i>	<i>Mb0358</i>	SGASDLRS
68	58963	<i>Rv0350</i>	<i>Mb0358</i>	SKVPEDTL
69	63420	<i>Rv0350</i>	<i>Mb0358</i>	TEKFVKEQ
70	64980	<i>Rv0350</i>	<i>Mb0358</i>	TLNKVDAA
71	67616	<i>Rv0350</i>	<i>Mb0358</i>	VAGSGASD
72	68636	<i>Rv0350</i>	<i>Mb0358</i>	VGDGEAGP
73	70277	<i>Rv0350</i>	<i>Mb0358</i>	VPEDTLNK

74	72142	<i>Rv0350</i>	<i>Mb0358</i>	VYQTEKVV
75	73033	<i>Rv0350</i>	<i>Mb0358</i>	WRIGYFGH
76	73817	<i>Rv0350</i>	<i>Mb0358</i>	YFGHQVGD
77	75560	<i>Rv0350</i>	<i>Mb0358</i>	YQTEKVVK
78	120639	<i>Rv0418</i>	<i>Mb0426</i>	IPVVSVTKSVGFQLRGQSGPTTVK
79	120810	<i>Rv0418</i>	<i>Mb0426</i>	MVNKSRMMPAV
80	9278	<i>Rv0440</i>	<i>Mb0448</i>	DLSLLGKARKVVVTKD
81	103346	<i>Rv0440</i>	<i>Mb0448</i>	LEPGVVAEKVRNLPA
82	103378	<i>Rv0440</i>	<i>Mb0448</i>	LPLLEKVVIGAGKPLL
83	103554	<i>Rv0440</i>	<i>Mb0448</i>	RKVVVTKDETTIVEG
84	103605	<i>Rv0440</i>	<i>Mb0448</i>	SKVSTVKDLLPPLLEK
85	103744	<i>Rv0440</i>	<i>Mb0448</i>	YDREKLQERLAKLAG
86	132976	<i>Rv0440</i>	<i>Mb0448</i>	AASIAGLFL
87	132994	<i>Rv0440</i>	<i>Mb0448</i>	ALVREGLRNVAAG
88	133264	<i>Rv0440</i>	<i>Mb0448</i>	NTFGLQLEL
89	175506	<i>Rv0440</i>	<i>Mb0448</i>	TLVVNKIRGTFKSVAVKAPG
90	103143	<i>Rv0447c</i>	<i>Mb0455c</i>	EMIEAVGYRSWPRYF
91	103264	<i>Rv0447c</i>	<i>Mb0455c</i>	HWLRPITPTFRPSWP
92	103431	<i>Rv0447c</i>	<i>Mb0455c</i>	MWELYLAYSEAGFRS
93	94762	<i>Rv0475</i>	<i>Mb0485</i>	AAPAKKAAPAKKAAA + METH(K179)
94	94763	<i>Rv0475</i>	<i>Mb0485</i>	AAPAKKAAPAKKAAA + METH(K179, K180)
95	122097	<i>Rv0538</i>	<i>Mb0552</i>	FPGWQPGMPTIPTAPPTTPV
96	122140	<i>Rv0538</i>	<i>Mb0552</i>	LQDSGVHDVAVISEAQATA
97	122143	<i>Rv0538</i>	<i>Mb0552</i>	LSVVGDPDAPPTMVAVAPVA
98	122162	<i>Rv0538</i>	<i>Mb0552</i>	PIPVPIIIPFPGWQPGMPT
99	103141	<i>Rv0652</i>	<i>Mb0671</i>	EKVAKEAADEAKAKL

100	103165	<i>Rv0652</i>	<i>Mb0671</i>	FEETFEVTAAAPVAV
101	103344	<i>Rv0652</i>	<i>Mb0671</i>	LEAAGDKKIGVIKVV
102	103426	<i>Rv0652</i>	<i>Mb0671</i>	MTLLELSDFVKKFEE
103	103589	<i>Rv0652</i>	<i>Mb0671</i>	SEFDVILEAAGDKKI
104	103301	<i>Rv0667</i>	<i>Mb0686</i>	KAMLFDGRSGEPFPY
105	103209	<i>Rv0667</i>	<i>Mb0686</i>	GFSEIMRSTLEKDNT
106	103255	<i>Rv0667</i>	<i>Mb0686</i>	HGTCANQCPIVDAGD
107	103361	<i>Rv0667</i>	<i>Mb0686</i>	LLDIYRKLRPGEPT
108	103669	<i>Rv0667</i>	<i>Mb0686</i>	TSEQIVERFGFSEIM
109	103716	<i>Rv0667</i>	<i>Mb0686</i>	VRERMTTQDVEAITP
110	103037	<i>Rv0668</i>	<i>Mb0687</i>	AKVRRERMGHIELAA
111	103078	<i>Rv0668</i>	<i>Mb0687</i>	AYVITSVDEEMRHNE
112	103244	<i>Rv0668</i>	<i>Mb0687</i>	GVPSRLGYLLDLAPK
113	103464	<i>Rv0668</i>	<i>Mb0687</i>	PETINYRTLKPEKDG
114	121059	<i>Rv0755c</i>	<i>Mb0777c</i>	VVHPAVVQANRVRTWLLAVSNVFGQ
115	103198	<i>Rv0916c</i>	<i>Mb0940c</i>	GDLPTIGTAVSARNT
116	103420	<i>Rv0916c</i>	<i>Mb0940c</i>	MSFVTIQPVVLAAT
117	103055	<i>Rv0928</i>	<i>Mb0951</i>	AQAQHLTMANIVTSA
118	103153	<i>Rv0928</i>	<i>Mb0951</i>	ESGTTDNFQRYLQAA
119	103531	<i>Rv0928</i>	<i>Mb0951</i>	QSGLDNGYIPIPDE
120	103577	<i>Rv0928</i>	<i>Mb0951</i>	SAAAKNTPGSITYNE
121	103536	<i>Rv0931c</i>	<i>Mb0955c</i>	QVGSQFGPYQLLRLL
122	103754	<i>Rv0931c</i>	<i>Mb0955c</i>	YRADSVERLIAAHLM
123	103579	<i>Rv0932c</i>	<i>Mb0956c</i>	SAERCGSPAIDLPTV
124	103462	<i>Rv0932c</i>	<i>Mb0956c</i>	PDRSAERCGSPAIDL
125	103010	<i>Rv0932c</i>	<i>Mb0956c</i>	ACGGGTNSSSSGAGG

126	103230	<i>Rv0932c</i>	<i>Mb0956c</i>	GPGQEGLDQYGS IPL
127	103493	<i>Rv0932c</i>	<i>Mb0956c</i>	PPTPISVIFRSDKSG
128	103569	<i>Rv0932c</i>	<i>Mb0956c</i>	RSCPGYTL DYNANGS
129	103738	<i>Rv0932c</i>	<i>Mb0956c</i>	WSFAVGKQLNMAQII
130	103751	<i>Rv0932c</i>	<i>Mb0956c</i>	YNANGSGAGVTQFLN
131	103061	<i>Rv0934</i>	<i>Mb0959</i>	ASFLDQVHFQPLPPA
132	103227	<i>Rv0934</i>	<i>Mb0959</i>	GNKASFLDQVHFQPL
133	9924	<i>Rv0934</i>	<i>Mb0959</i>	DQVHFQPLPPAVVKLS DALI
134	103633	<i>Rv0934</i>	<i>Mb0959</i>	TAQTLQAFLHWAITD
135	7472	<i>Rv0934</i>	<i>Mb0959</i>	DAATAQTLQAFLHWAITDGN
136	103659	<i>Rv0934</i>	<i>Mb0959</i>	TLQAFLHWAITDGNK
137	120481	<i>Rv0934</i>	<i>Mb0959</i>	EHLKLN GKVLAAMYQ
138	103373	<i>Rv0934</i>	<i>Mb0959</i>	LPGVSEHLKLN GKVL
139	103004	<i>Rv0934</i>	<i>Mb0959</i>	AAHKGLMNIALAISA
140	103018	<i>Rv0934</i>	<i>Mb0959</i>	AFLHWAITDGNKASF
141	103021	<i>Rv0934</i>	<i>Mb0959</i>	AGAGTVATTPASSPV
142	103029	<i>Rv0934</i>	<i>Mb0959</i>	AGTVNIGASDAYLSE
143	103090	<i>Rv0934</i>	<i>Mb0959</i>	CVAYIGISFLDQASQ
144	103105	<i>Rv0934</i>	<i>Mb0959</i>	DGYPIINYEYAI VNN
145	103137	<i>Rv0934</i>	<i>Mb0959</i>	EGWGKSPGFGTTVDF
146	103260	<i>Rv0934</i>	<i>Mb0959</i>	HRSDGSGDTFLFTQY
147	103286	<i>Rv0934</i>	<i>Mb0959</i>	ISMIDGPAPDGYPII
148	103304	<i>Rv0934</i>	<i>Mb0959</i>	KGLMNIALAISAQQV
149	103349	<i>Rv0934</i>	<i>Mb0959</i>	LGENGNGGMVTGCAE
150	103386	<i>Rv0934</i>	<i>Mb0959</i>	LSEGDMAAHKGLMNI
151	103415	<i>Rv0934</i>	<i>Mb0959</i>	MNIALAISAQQVNYN

152	103516	<i>Rv0934</i>	<i>Mb0959</i>	QDPEGWGKSPGFGTT
153	103547	<i>Rv0934</i>	<i>Mb0959</i>	RGLGEAQLGNSSGNF
154	103747	<i>Rv0934</i>	<i>Mb0959</i>	YIGISFLDQASQRGL
155	120511	<i>Rv0956</i>	<i>Mb0981</i>	ETLHERIKVTERRLLVAAVAALATH
156	120410	<i>Rv0956</i>	<i>Mb0981</i>	ARLVVLASGTGSLLR
157	120537	<i>Rv1114</i>	<i>Mb1144</i>	FPVVTHDEVLRRLVGRRRLWGRG
158	103365	<i>Rv1196</i>	<i>Mb1228</i>	LMILIATNLLGQNTF
159	103503	<i>Rv1196</i>	<i>Mb1228</i>	PVIAENRAELMILIA
160	103007	<i>Rv1196</i>	<i>Mb1228</i>	AAQAVQTAAQNGVRA
161	103452	<i>Rv1196</i>	<i>Mb1228</i>	NTPAIAVNEAEYEM
162	120569	<i>Rv1382</i>	<i>Mb1417</i>	GSLIFAAVLVMLIAVLARLMMRGWR
163	120912	<i>Rv1382</i>	<i>Mb1417</i>	RGVAGKVVAGIGILAIRWRLPSGT
164	120802	<i>Rv1434</i>	<i>Mb1469</i>	MRASPAERVDGAYAGAGPHTQSV
165	120399	<i>Rv1582c</i>	<i>Mb1608c</i>	AIWRRIRVVPFEVVIPADEQD
166	103274	<i>Rv1636</i>	<i>Mb1662</i>	ILKDESYKVTGTAPI
167	103620	<i>Rv1636</i>	<i>Mb1662</i>	SVPANVSRRRAKVDVL
168	103694	<i>Rv1636</i>	<i>Mb1662</i>	VGNVGLSTIAGRLLG
169	103425	<i>Rv1690</i>	<i>Mb1716</i>	MTAHTHDGTRTWRTG
170	103434	<i>Rv1690</i>	<i>Mb1716</i>	NAFLTALTNAGIAYD
171	103693	<i>Rv1690</i>	<i>Mb1716</i>	VFGGAASCAAPIQAD
172	103128	<i>Rv1793</i>	<i>Mb1821</i>	EAEHQAIVRDVLAAAG
173	103170	<i>Rv1793</i>	<i>Mb1821</i>	FGDVDAHGAMIRAQA
174	103121	<i>Rv1827</i>	<i>Mb1858</i>	DVGSLLNGTYVNREP
175	103291	<i>Rv1827</i>	<i>Mb1858</i>	ITSAGRHPDSDIFLD
176	103347	<i>Rv1837c</i>	<i>Mb1868c</i>	LFSRVEDVLGLPQNT
177	103636	<i>Rv1837c</i>	<i>Mb1868c</i>	TCELFSRVEDVLGLP

178	103641	<i>Rv1837c</i>	<i>Mb1868c</i>	TDVIPETDGAKEGPT
179	103651	<i>Rv1837c</i>	<i>Mb1868c</i>	TIEQLLTIPLAKELA
180	72741	<i>Rv1862</i>	<i>Mb1893</i>	WLKLGLEFEGGVAKLNAEVMS
181	120392	<i>Rv1866</i>	<i>Mb1897</i>	AAVQAAWAVLVAYFNRLRCGTGDY
182	120452	<i>Rv1866</i>	<i>Mb1897</i>	DRYRHLVALSITDFGAAGRSSWRA
183	121017	<i>Rv1866</i>	<i>Mb1897</i>	TTIFPDHVVGVRV GALLALAALHRD
184	18898	<i>Rv1886c</i>	<i>Mb1918c</i>	GCQTYKWETFLTSELPQWLS
185	10841	<i>Rv1886c</i>	<i>Mb1918c</i>	DWYSPACGKAGCQTYKWETF
186	223	<i>Rv1886c</i>	<i>Mb1918c</i>	AAIGLSMAGSSAMILAAYHP
187	503	<i>Rv1886c</i>	<i>Mb1918c</i>	AAVVLPLVGLAGGAATAGA
188	1545	<i>Rv1886c</i>	<i>Mb1918c</i>	AGGYKAADMWGPSSDPAWER
189	2695	<i>Rv1886c</i>	<i>Mb1918c</i>	ALLDPSQGMGPSLIGLAMGD
190	3400	<i>Rv1886c</i>	<i>Mb1918c</i>	ANRAVKPTGSAAIGLSMAGS
191	6323	<i>Rv1886c</i>	<i>Mb1918c</i>	CGNGTPNELGGANIPAEFLE
192	8688	<i>Rv1886c</i>	<i>Mb1918c</i>	DIKVQFQSGGNNSPAVYLLD
193	18700	<i>Rv1886c</i>	<i>Mb1918c</i>	GANIPAEFLENFVRSSNLKF
194	21096	<i>Rv1886c</i>	<i>Mb1918c</i>	GLRAQDDYNGWDINTPAFEW
195	21797	<i>Rv1886c</i>	<i>Mb1918c</i>	GPSSDPAWERNDPTQQIPKL
196	34776	<i>Rv1886c</i>	<i>Mb1918c</i>	LAGGAATAGAFSRPGLPVEY
197	40165	<i>Rv1886c</i>	<i>Mb1918c</i>	LTSELPQWLSANRAVKPTGS
198	42790	<i>Rv1886c</i>	<i>Mb1918c</i>	MTDVSRRKIRAWGRRMLIGTA
199	43332	<i>Rv1886c</i>	<i>Mb1918c</i>	NAVFNFPPNGTHSWEYWGAQ
200	43514	<i>Rv1886c</i>	<i>Mb1918c</i>	NDPTQQIPKLVANNTRLWVY
201	45250	<i>Rv1886c</i>	<i>Mb1918c</i>	NNSPAVYLLDGLRAQDDYNG
202	48646	<i>Rv1886c</i>	<i>Mb1918c</i>	PNGTHSWEYWGAQ
203	49421	<i>Rv1886c</i>	<i>Mb1918c</i>	PSLIGLAMGDAGGYKAADMW

204	49872	<i>Rv1886c</i>	<i>Mb1918c</i>	PVGGQSSFYSDWYSPACGKA
205	50442	<i>Rv1886c</i>	<i>Mb1918c</i>	QDAYNAAGGHNAVFNFPNG
206	52026	<i>Rv1886c</i>	<i>Mb1918c</i>	QQFIYAGSLSALLDPSQGMG
207	56895	<i>Rv1886c</i>	<i>Mb1918c</i>	SAMILAAYHPQQFIYAGSLS
208	64079	<i>Rv1886c</i>	<i>Mb1918c</i>	THSWEYWGAQLNAMKGDLS
209	67697	<i>Rv1886c</i>	<i>Mb1918c</i>	VANNTRLWVYCGNGTPNELG
210	72314	<i>Rv1886c</i>	<i>Mb1918c</i>	WDINTPAFEWYYQSGLSIVM
211	72515	<i>Rv1886c</i>	<i>Mb1918c</i>	WGRRLMIGTAAAVVLPGLVG
212	76584	<i>Rv1886c</i>	<i>Mb1918c</i>	YYQSGLSIVMPVGGQSSFYS
213	103272	<i>Rv1886c</i>	<i>Mb1918c</i>	IGLSMAGSSAMILAA
214	103457	<i>Rv1886c</i>	<i>Mb1918c</i>	PAEFLENFVRSSNLK
215	103530	<i>Rv1886c</i>	<i>Mb1918c</i>	QSGGNNSPAVYLLDG
216	103532	<i>Rv1886c</i>	<i>Mb1918c</i>	QSSFYSDWYSPACGK
217	103578	<i>Rv1886c</i>	<i>Mb1918c</i>	SAAIGLSMAGSSAMI
218	103668	<i>Rv1886c</i>	<i>Mb1918c</i>	TSELPQWLSANRAVK
219	103729	<i>Rv1886c</i>	<i>Mb1918c</i>	WGPSSDPAWERNDPT
220	103732	<i>Rv1886c</i>	<i>Mb1918c</i>	WLSANRAVKPTGSAA
221	103067	<i>Rv1926c</i>	<i>Mb1961c</i>	ATIPQGEQSTGKIYF
222	103283	<i>Rv1926c</i>	<i>Mb1961c</i>	IRGSVTPAVSQFNAR
223	103355	<i>Rv1926c</i>	<i>Mb1961c</i>	LGWKVSDLKSSTAVI
224	103479	<i>Rv1926c</i>	<i>Mb1961c</i>	PGYPVAGQVWEATAT
225	103501	<i>Rv1926c</i>	<i>Mb1961c</i>	PVAGQVWEATATVNA
226	103537	<i>Rv1926c</i>	<i>Mb1961c</i>	QVVLGWKVSDLKSST
227	120441	<i>Rv1979c</i>	<i>Mb2001c</i>	DKVLPLVAIVVSVGLAVSYD
228	120788	<i>Rv1979c</i>	<i>Mb2001c</i>	LTFLGFIGVLLAINLFGNRAIKWAN
229	22997	<i>Rv1980c</i>	<i>Mb2002c</i>	GVIFFFNPGELLPEA

230	24522	<i>Rv1980c</i>	<i>Mb2002c</i>	HPTTTYKAFDWDQAYRKPIT
231	44381	<i>Rv1980c</i>	<i>Mb2002c</i>	NITSATYQSAIPPRGTQAVV
232	103145	<i>Rv1980c</i>	<i>Mb2002c</i>	ENYIAQTRDKFLSAA
233	103525	<i>Rv1980c</i>	<i>Mb2002c</i>	QNAGGTHPTTTYKAF
234	103635	<i>Rv1980c</i>	<i>Mb2002c</i>	TAVVLLCCSGVATAA
235	103661	<i>Rv1980c</i>	<i>Mb2002c</i>	TNDGVIFFFNPCELL
236	103327	<i>Rv1984c</i>	<i>Mb2006c</i>	KTINLCAPDDPICTG
237	103348	<i>Rv1984c</i>	<i>Mb2006c</i>	LGDVGEAFVDSLTSQ
238	103686	<i>Rv1984c</i>	<i>Mb2006c</i>	VALFGEPSSGFSSML
239	120777	<i>Rv1986</i>	<i>Mb2008</i>	LPVVALCTVSDIVLIAAGIAGFGA
240	20662	<i>Rv2031c</i>	<i>Mb2057c</i>	GKPTEKHIQIRSTN
241	53355	<i>Rv2031c</i>	<i>Mb2057c</i>	RDGQLTIKAERTEQKDFDGR
242	56043	<i>Rv2031c</i>	<i>Mb2057c</i>	RTEQKDFDGRSEFAYGSFVR
243	67156	<i>Rv2031c</i>	<i>Mb2057c</i>	TVSLPVGAEDEDDIKATYDKG
244	103130	<i>Rv2031c</i>	<i>Mb2057c</i>	EDEMKEGRYEVRAEL
245	103180	<i>Rv2031c</i>	<i>Mb2057c</i>	FPSFAGLRPTFDTRL
246	103718	<i>Rv2031c</i>	<i>Mb2057c</i>	VSVAVSEGKPKTEKHI
247	103266	<i>Rv2185c</i>	<i>Mb2207c</i>	IADIEAYPQWISEYK
248	103731	<i>Rv2185c</i>	<i>Mb2207c</i>	WISEYKEVEILEADD
249	103296	<i>Rv2246</i>	<i>Mb2270</i>	IVMSTNNDDPAGACR
250	120892	<i>Rv2346c</i>	<i>Mb2375c</i>	QKVQAAGNNMAQT
251	21765	<i>Rv2351c</i>	<i>no existed</i>	GPRLYGEMTMQGRKPRPSGP
252	27635	<i>Rv2351c</i>	<i>no existed</i>	INFNCEVWSNVSETISGPRLY
253	41948	<i>Rv2351c</i>	<i>no existed</i>	MLGNAPSVPNTTLGM
254	66693	<i>Rv2351c</i>	<i>no existed</i>	TTLGMHCGSFGSAPSNG
255	4556	<i>Rv2351c</i>	<i>no existed</i>	ASMLGTVTNSPGVPAVPWGA

256	103737	<i>Rv2430c</i>	<i>Mb2456c</i>	WRSLDVEMTAVQRSF
257	103338	<i>Rv2453c</i>	<i>Mb2480c</i>	LAPDTVPLAGVVLG
258	103472	<i>Rv2453c</i>	<i>Mb2480c</i>	PGGTTTTLVEHMGIL
259	103548	<i>Rv2453c</i>	<i>Mb2480c</i>	RGLRAAAEAGVRLAF
260	103687	<i>Rv2453c</i>	<i>Mb2480c</i>	VCAVDMPYLTVELIE
261	9474	<i>Rv2608</i>	<i>Mb2640</i>	DNIGNANIGFGN
262	9475	<i>Rv2608</i>	<i>Mb2640</i>	DNIGNANIGFGNRGDANIGIGNIGDRNLGIGNTGNW
263	10022	<i>Rv2608</i>	<i>Mb2640</i>	DRNLGIGNTGNW
264	20281	<i>Rv2608</i>	<i>Mb2640</i>	GIGNIGDRNLGI
265	21497	<i>Rv2608</i>	<i>Mb2640</i>	GNPNRPDGGILT
266	39354	<i>Rv2608</i>	<i>Mb2640</i>	LSFTLTGNPNRP
267	44231	<i>Rv2608</i>	<i>Mb2640</i>	NIGFGNRGDANI
268	53833	<i>Rv2608</i>	<i>Mb2640</i>	RGDANIGIGNIG
269	55157	<i>Rv2608</i>	<i>Mb2640</i>	RPGLDELSFTLT
270	55158	<i>Rv2608</i>	<i>Mb2640</i>	RPGLDELSFTLTGNPNRPDGGILT
271	103393	<i>Rv2608</i>	<i>Mb2640</i>	LTTYILLPSQDLPLL
272	103116	<i>Rv2626c</i>	<i>Mb2659c</i>	DSIYYVDANASIQEM
273	103197	<i>Rv2626c</i>	<i>Mb2659c</i>	GDDRLHGMLTDRDI
274	103247	<i>Rv2629</i>	<i>Mb2662</i>	GYPVHKPVTAGWNGY
275	103162	<i>Rv2780</i>	<i>Mb2803</i>	FCGRIHTRYSSAYEL
276	103002	<i>Rv2873</i>	<i>Mb2898</i>	AAASLAAIAIAFLAG
277	103118	<i>Rv2873</i>	<i>Mb2898</i>	DTLNGGEYTVFAPT
278	103262	<i>Rv2873</i>	<i>Mb2898</i>	HVIAGQASPSRIDGT
279	103267	<i>Rv2873</i>	<i>Mb2898</i>	IAFLAGCSSTKPVSQ
280	103000	<i>Rv2875</i>	<i>Mb2900</i>	AAAGDLVGPGEAIEYA
281	103199	<i>Rv2875</i>	<i>Mb2900</i>	GDLVGPGEAIEYAAAN

282	103720	<i>Rv2875</i>	<i>Mb2900</i>	VTVTGQGNSLKVGN
283	103195	<i>Rv2875</i>	<i>Mb2900</i>	GASVTVTGQGNSLKV
284	103082	<i>Rv2875</i>	<i>Mb2900</i>	CGGVSTANATVYMID
285	103746	<i>Rv2875</i>	<i>Mb2900</i>	YHVVAGQTSPANVVG
286	103339	<i>Rv2940c</i>	<i>Mb2965c</i>	LASTLTDALKSHGPQ
287	103185	<i>Rv2940c</i>	<i>Mb2965c</i>	FRMELLSLPQDEWAG
288	103246	<i>Rv2940c</i>	<i>Mb2965c</i>	GYIPILGAPWLADLV
289	103384	<i>Rv2940c</i>	<i>Mb2965c</i>	LQAHPHAVNGTAMRE
290	103476	<i>Rv2940c</i>	<i>Mb2965c</i>	PGQGAYAAANSWVDV
291	103480	<i>Rv2940c</i>	<i>Mb2965c</i>	PILGAPWLADLVRRS
292	103490	<i>Rv2940c</i>	<i>Mb2965c</i>	PPGYDITALLQAHPH
293	103612	<i>Rv2940c</i>	<i>Mb2965c</i>	SPHPLLTHAVEQTGR
294	103629	<i>Rv2940c</i>	<i>Mb2965c</i>	TAALRAAEDDCPPPG
295	103700	<i>Rv2940c</i>	<i>Mb2965c</i>	VHNVAALPGAAYCEM
296	103125	<i>Rv2941</i>	<i>Mb2966</i>	DVVQHVARRPGESPP
297	103756	<i>Rv2941</i>	<i>Mb2966</i>	YTFKEDEYPSTAYLQ
298	103017	<i>Rv2957</i>	<i>Mb2981</i>	AFDLDRLLFKRNICH
299	103031	<i>Rv2958c</i>	<i>Mb2982c</i>	AIANAYWSPQARRRF
300	103179	<i>Rv2958c</i>	<i>Mb2982c</i>	FPHHPIHTVPSEEV
301	103566	<i>Rv2958c</i>	<i>Mb2982c</i>	RRFPLPDVPWTRFFG
302	103677	<i>Rv2958c</i>	<i>Mb2982c</i>	TVIAATAGRNHLKNV
303	103703	<i>Rv2958c</i>	<i>Mb2982c</i>	VLCNGGSPPTQQALA
304	103112	<i>Rv2962c</i>	<i>Mb2986c</i>	DPRYNQLLGLPFRH
305	103549	<i>Rv2962c</i>	<i>Mb2986c</i>	RHGLSSLGWNLCRIF
306	103717	<i>Rv2962c</i>	<i>Mb2986c</i>	VRRRHGLSSLGWNLC
307	103755	<i>Rv2962c</i>	<i>Mb2986c</i>	YRLERPLLALQCM

308	120587	<i>Rv2994</i>	<i>Mb3018</i>	HSLWIGVFLFLGGMAAGGCNS
309	120630	<i>Rv2994</i>	<i>Mb3018</i>	IMIVSLGVTASSFLFINGVAFLIPR
310	120878	<i>Rv2994</i>	<i>Mb3018</i>	PSWGLVVTMFAWGYLLDHVGERMV
311	120961	<i>Rv2994</i>	<i>Mb3018</i>	SPYRGSSILWRIHAASALLMMP
312	121057	<i>Rv2994</i>	<i>Mb3018</i>	VTVTFMLVWLINHHGWSVAQ
313	103359	<i>Rv3133c</i>	<i>Mb3157c</i>	LILTSYTSDEAMLDA
314	120904	<i>Rv3219</i>	<i>Mb3245</i>	RALKRRNARTKAR
315	103403	<i>Rv3221c</i>	<i>Mb3247c</i>	MAEDVRAEIVASVLE
316	103708	<i>Rv3221c</i>	<i>Mb3247c</i>	VLLESMKMEIPVLAE
317	103102	<i>Rv3339c</i>	<i>Mb3371c</i>	DEMTRVIWKLKIDML
318	103297	<i>Rv3339c</i>	<i>Mb3371c</i>	IWKLIKDMLILPYLD
319	103432	<i>Rv3339c</i>	<i>Mb3371c</i>	MWLSPNGTIRNILGG
320	103352	<i>Rv3347c</i>	<i>Mb3380c</i>	LGGGVGAFLNALFAG
321	103038	<i>Rv3347c</i>	<i>Mb3380c</i>	ALMSGNFNNGILWRG
322	22387	<i>Rv3347c</i>	<i>Mb3379c</i>	GSINTGWFNTGNANTG
323	103022	<i>Rv3347c</i>	<i>Mb3380c</i>	AGFTAPATLLSALG
324	103469	<i>Rv3347c</i>	<i>Mb3380c</i>	PFNVNLKLQFLHDAF
325	103645	<i>Rv3347c</i>	<i>Mb3379c</i>	TGGGGGSGFSNSGSG
326	19562	<i>Rv3347c</i>	<i>Mb3379c</i>	GFKVRPSFSFFAVGPDGMP
327	103482	<i>Rv3347c</i>	<i>Mb3380c</i>	PLDTPPAPAPPPFRL
328	103664	<i>Rv3347c</i>	<i>Mb3380c</i>	TPPAPAPPPFRLPLL
329	103534	<i>Rv3354</i>	<i>Mb3389</i>	QSVCPILAEPPGGSFN
330	4132	<i>Rv3418c</i>	<i>Mb3452c</i>	ARDVLAVVSK
331	8900	<i>Rv3418c</i>	<i>Mb3452c</i>	DKILVQANEAETTTA
332	14574	<i>Rv3418c</i>	<i>Mb3452c</i>	ETTTASGLVIPDTAK
333	35316	<i>Rv3418c</i>	<i>Mb3452c</i>	LDVAEGDTVIYSKYG

334	41071	<i>Rv3418c</i>	<i>Mb3452c</i>	MAKVNIKPLEDKILV
335	47209	<i>Rv3418c</i>	<i>Mb3452c</i>	PDTAKEKPQEGTVVA
336	72294	<i>Rv3418c</i>	<i>Mb3452c</i>	WDEDGEKRIPLDVAE
337	103013	<i>Rv3418c</i>	<i>Mb3452c</i>	AEGDTVIYSKYGGTE
338	103695	<i>Rv3418c</i>	<i>Mb3452c</i>	VGPGRWDEDGEKRIP
339	120887	<i>Rv3736</i>	<i>Mb3763</i>	QDVGNYDAFISIRAAIRAIESA
340	433	<i>Rv3763</i>	<i>Mb3789</i>	AASGPKVVIDGKDQNVTVGSV
341	4334	<i>Rv3763</i>	<i>Mb3789</i>	ASATKDGSHYKITGTATGVD
342	4990	<i>Rv3763</i>	<i>Mb3789</i>	ATGVDMANPMSPVNKSFEIE
343	8464	<i>Rv3763</i>	<i>Mb3789</i>	DGNPPEVKSVGLGNVNGVTL
344	25315	<i>Rv3763</i>	<i>Mb3789</i>	IAIGGAATGIAAVLTDGNPP
345	42633	<i>Rv3763</i>	<i>Mb3789</i>	MSPVNKSFEIEVTCS
346	58022	<i>Rv3763</i>	<i>Mb3789</i>	SGETTTAAGTTASPGAASGP
347	67607	<i>Rv3763</i>	<i>Mb3789</i>	VAGLSGCSSNKSTTGSETT
348	71346	<i>Rv3763</i>	<i>Mb3789</i>	VTGSVVCTTAAGNVNIAIGG
349	105967	<i>Rv3763</i>	<i>Mb3789</i>	MKRGLTVAVAGAAILVAGLS
350	105976	<i>Rv3763</i>	<i>Mb3789</i>	NGVTLGYTSGTCQGNASATK
351	38439	<i>Rv3803c</i>	<i>Mb3833c</i>	LPDWLAANRGLAPGG
352	46806	<i>Rv3803c</i>	<i>Mb3833c</i>	PAGGAYSMYTNWEQD
353	1522	<i>Rv3804c</i>	<i>Mb3834c</i>	AGGGHNGVDFPDSG
354	3402	<i>Rv3804c</i>	<i>Mb3834c</i>	ANRHVKPTGSAVVGL
355	17838	<i>Rv3804c</i>	<i>Mb3834c</i>	FSRPLPVEYLQVPSPSMGR
356	39011	<i>Rv3804c</i>	<i>Mb3834c</i>	LQVPSPSMGRDIKVQFQSGG
357	49333	<i>Rv3804c</i>	<i>Mb3834c</i>	PSDLGGNNLPAKFLE
358	51790	<i>Rv3804c</i>	<i>Mb3834c</i>	QPACRKAGCQTYKWE
359	70010	<i>Rv3804c</i>	<i>Mb3834c</i>	VMPVGGQSSFYSWDWY

360	98793	<i>Rv3841</i>	<i>Mb3871</i>	GEQFMQWFLQEQIEEVALMA
361	98906	<i>Rv3841</i>	<i>Mb3871</i>	MLVQHLLDRDLRVEIPGVDI
362	103697	<i>Rv3864</i>	<i>Mb3894</i>	VGQVTATMGQLQQLV
363	103176	<i>Rv3864</i>	<i>Mb3894</i>	FLGGFAGLPSLGFGN
364	103331	<i>Rv3864</i>	<i>Mb3894</i>	LAALPDFLGGFAGLP
365	103510	<i>Rv3864</i>	<i>Mb3894</i>	QAQLISSQAQQGGQQ
366	103245	<i>Rv3864</i>	<i>Mb3894</i>	GVYKVCKGLEKIPLL
367	103340	<i>Rv3864</i>	<i>Mb3894</i>	LCKTTSNFIWGQLLL
368	103649	<i>Rv3864</i>	<i>Mb3894</i>	TGNMISNQAKYVSDI
369	187	<i>Rv3874</i>	<i>Mb3904</i>	AAGTAAQAAVRFQE
370	655	<i>Rv3874</i>	<i>Mb3904</i>	ADEEQQQALSSQMGF
371	3934	<i>Rv3874</i>	<i>Mb3904</i>	AQAAVRFQEAAANKQ
372	21422	<i>Rv3874</i>	<i>Mb3904</i>	GNFERISGDLKTQID
373	28505	<i>Rv3874</i>	<i>Mb3904</i>	ISGDLKTQIDQVEST
374	32971	<i>Rv3874</i>	<i>Mb3904</i>	KQELDEISTNIRQAG
375	33831	<i>Rv3874</i>	<i>Mb3904</i>	KTQIDQVESTAGSLQ
376	34927	<i>Rv3874</i>	<i>Mb3904</i>	LAQEAGNFERISGDL
377	37040	<i>Rv3874</i>	<i>Mb3904</i>	LKTQIDQVESTAG
378	41028	<i>Rv3874</i>	<i>Mb3904</i>	MAEMKTDAAATLAQEA
379	50549	<i>Rv3874</i>	<i>Mb3904</i>	QEAGNFERISGDLKT
380	103519	<i>Rv3874</i>	<i>Mb3904</i>	QGQWRGAAGTAAQAA
381	120421	<i>Rv3874</i>	<i>Mb3904</i>	AVVRFQEAAANKQK
382	60	<i>Rv3875</i>	<i>Mb3905</i>	AAASAIQGNVTSIHSL
383	35139	<i>Rv3875</i>	<i>Mb3905</i>	LDEGKQSLTKLAAAWG
384	46500	<i>Rv3875</i>	<i>Mb3905</i>	NVTSIHSLLDGKQSL
385	52048	<i>Rv3875</i>	<i>Mb3905</i>	QQKWDATATELNN

386	61578	<i>Rv3875</i>	<i>Mb3905</i>	STEGNVTGMFA
387	120550	<i>Rv3878</i>	<i>Mb3908</i>	GDVQPAEVVAAAR
388	120870	<i>Rv3879c</i>	<i>Mb3909c</i>	PHVKPAALAEQPG
389	103371	<i>Rv3881c</i>	<i>Mb3911c</i>	LPADTAAQLTSAGRE
390	103208	<i>Rv3881c</i>	<i>Mb3911c</i>	GFLMPPSDGSGVTPG
391	103258	<i>Rv3881c</i>	<i>Mb3911c</i>	HQGQGGAKSKGSQQE
392	103511	<i>Rv3881c</i>	<i>Mb3911c</i>	QAQYVAQLHVWARRE
393	120408	<i>Rv3883c</i>	<i>Mb3913c</i>	APYNVRRLLPPPVEP
394	120428	<i>Rv3883c</i>	<i>Mb3913c</i>	DDLVGAGVIDAVA
395	98728	<i>Rv3914</i>	<i>Mb3945</i>	DFWATWCGPCKMVAPVLEEI
396	98784	<i>Rv3914</i>	<i>Mb3945</i>	GAKGKAALLRELSDVVPLN
397	98852	<i>Rv3914</i>	<i>Mb3945</i>	KMVAPVLEEIATERATDLTV
398	103284	<i>Rv3922c</i>	<i>Mb3953c</i>	IRLAKCGPWHRGGWD
399	103385	<i>Rv3922c</i>	<i>Mb3953c</i>	LRPASCRFVPTCSQY

Table S3 Functional classification of genes coding B cell epitope

H37Rv gene	<i>M. bovis</i> Gene	Gene Category
<i>Rv0287</i>	<i>Mb0295</i>	cell wall and cell processes
<i>Rv0288</i>	<i>Mb0296</i>	cell wall and cell processes
<i>Rv0418</i>	<i>Mb0426</i>	cell wall and cell processes
<i>Rv0475</i>	<i>Mb0485</i>	cell wall and cell processes
<i>Rv0538</i>	<i>Mb0552</i>	cell wall and cell processes
<i>Rv0928</i>	<i>Mb0951</i>	cell wall and cell processes
<i>Rv0932c</i>	<i>Mb0956c</i>	cell wall and cell processes
<i>Rv0934</i>	<i>Mb0959</i>	cell wall and cell processes
<i>Rv1382</i>	<i>Mb1417</i>	cell wall and cell processes

<i>Rv1690</i>	<i>Mb1716</i>	cell wall and cell processes
<i>Rv1793</i>	<i>Mb1821</i>	cell wall and cell processes
<i>Rv1926c</i>	<i>Mb1961c</i>	cell wall and cell processes
<i>Rv1979c</i>	<i>Mb2001c</i>	cell wall and cell processes
<i>Rv1980c</i>	<i>Mb2002c</i>	cell wall and cell processes
<i>Rv1984c</i>	<i>Mb2006c</i>	cell wall and cell processes
<i>Rv1986</i>	<i>Mb2008</i>	cell wall and cell processes
<i>Rv2346c</i>	<i>Mb2375c</i>	cell wall and cell processes
<i>Rv2873</i>	<i>Mb2898</i>	cell wall and cell processes
<i>Rv2875</i>	<i>Mb2900</i>	cell wall and cell processes
<i>Rv2994</i>	<i>Mb3018</i>	cell wall and cell processes
<i>Rv3763</i>	<i>Mb3789</i>	cell wall and cell processes
<i>Rv3864</i>	<i>Mb3894</i>	cell wall and cell processes
<i>Rv3874</i>	<i>Mb3904</i>	cell wall and cell processes
<i>Rv3875</i>	<i>Mb3905</i>	cell wall and cell processes
<i>Rv3878</i>	<i>Mb3908</i>	cell wall and cell processes
<i>Rv3879c</i>	<i>Mb3909c</i>	cell wall and cell processes
<i>Rv3881c</i>	<i>Mb3911c</i>	cell wall and cell processes
<i>Rv1434</i>	<i>Mb1469</i>	conserved hypotheticals
<i>Rv1827</i>	<i>Mb1858</i>	conserved hypotheticals
<i>Rv2185c</i>	<i>Mb2207c</i>	conserved hypotheticals
<i>Rv2626c</i>	<i>Mb2659c</i>	conserved hypotheticals
<i>Rv2629</i>	<i>Mb2662</i>	conserved hypotheticals
<i>Rv3354</i>	<i>Mb3389</i>	conserved hypotheticals
<i>Rv0652</i>	<i>Mb0671</i>	information pathways
<i>Rv0667</i>	<i>Mb0686</i>	information pathways

<i>Rv0668</i>	<i>Mb0687</i>	information pathways
<i>Rv1582c</i>	<i>Mb1608c</i>	insertion seqs and phages
<i>Rv0066c</i>	<i>Mb0067c</i>	intermediary metabolism and respiration
<i>Rv0125</i>	<i>Mb0130</i>	intermediary metabolism and respiration
<i>Rv0315</i>	<i>Mb0323</i>	intermediary metabolism and respiration
<i>Rv0956</i>	<i>Mb0981</i>	intermediary metabolism and respiration
<i>Rv1837c</i>	<i>Mb1868c</i>	intermediary metabolism and respiration
<i>Rv1862</i>	<i>Mb1893</i>	intermediary metabolism and respiration
<i>Rv2351c</i>	<i>no existed</i>	intermediary metabolism and respiration
<i>Rv2453c</i>	<i>Mb2480c</i>	intermediary metabolism and respiration
<i>Rv2780</i>	<i>Mb2803</i>	intermediary metabolism and respiration
<i>Rv2957</i>	<i>Mb2981</i>	intermediary metabolism and respiration
<i>Rv2958c</i>	<i>Mb2982c</i>	intermediary metabolism and respiration
<i>Rv2962c</i>	<i>Mb2986c</i>	intermediary metabolism and respiration
<i>Rv3339c</i>	<i>Mb3371c</i>	intermediary metabolism and respiration
<i>Rv3841</i>	<i>Mb3871</i>	intermediary metabolism and respiration
<i>Rv3883c</i>	<i>Mb3913c</i>	intermediary metabolism and respiration
<i>Rv3914</i>	<i>Mb3945</i>	intermediary metabolism and respiration
<i>Rv0447c</i>	<i>Mb0455c</i>	lipid metabolism
<i>Rv1866</i>	<i>Mb1897</i>	lipid metabolism
<i>Rv1886c</i>	<i>Mb1918c</i>	lipid metabolism
<i>Rv2246</i>	<i>Mb2270</i>	lipid metabolism
<i>Rv2940c</i>	<i>Mb2965c</i>	lipid metabolism
<i>Rv2941</i>	<i>Mb2966</i>	lipid metabolism
<i>Rv3221c</i>	<i>Mb3247c</i>	lipid metabolism
<i>Rv3803c</i>	<i>Mb3833c</i>	lipid metabolism

<i>Rv3804c</i>	<i>Mb3834c</i>	lipid metabolism
<i>Rv0755c</i>	<i>Mb0777c</i>	PE/PPE
<i>Rv0916c</i>	<i>Mb0940c</i>	PE/PPE
<i>Rv1196</i>	<i>Mb1228</i>	PE/PPE
<i>Rv2430c</i>	<i>Mb2456c</i>	PE/PPE
<i>Rv2608</i>	<i>Mb2640</i>	PE/PPE
<i>Rv3347c</i>	<i>Mb3379c/Mb3380c</i>	PE/PPE
<i>Rv0931c</i>	<i>Mb0955c</i>	regulatory proteins
<i>Rv3133c</i>	<i>Mb3157c</i>	regulatory proteins
<i>Rv3219</i>	<i>Mb3245</i>	regulatory proteins
<i>Rv3736</i>	<i>Mb3763</i>	regulatory proteins
<i>Rv0169</i>	<i>Mb0175</i>	virulence, detoxification, adaptation
<i>Rv0251c</i>	<i>Mb0257c</i>	virulence, detoxification, adaptation
<i>Rv0350</i>	<i>Mb0358</i>	virulence, detoxification, adaptation
<i>Rv0440</i>	<i>Mb0448</i>	virulence, detoxification, adaptation
<i>Rv1114</i>	<i>Mb1144</i>	virulence, detoxification, adaptation
<i>Rv1636</i>	<i>Mb1662</i>	virulence, detoxification, adaptation
<i>Rv2031c</i>	<i>Mb2057c</i>	virulence, detoxification, adaptation
<i>Rv3418c</i>	<i>Mb3452c</i>	virulence, detoxification, adaptation
<i>Rv3922c</i>	<i>Mb3953c</i>	virulence, detoxification, adaptation

Table S4 B cell epitopes grouping in BCGs

Group	Epitope ID	Characteristic
1	103203	present in 13 BCGs
1	103328	present in 13 BCGs
1	103550	present in 13 BCGs

1	103745	present in 13 BCGs
1	103113	present in 13 BCGs
1	103680	present in 13 BCGs
1	103040	present in 13 BCGs
1	103544	present in 13 BCGs
1	103580	present in 13 BCGs
1	38988	present in 13 BCGs
1	103042	present in 13 BCGs
1	103043	present in 13 BCGs
1	819	present in 13 BCGs
1	11021	present in 13 BCGs
1	948	present in 13 BCGs
1	1634	present in 13 BCGs
1	1676	present in 13 BCGs
1	4364	present in 13 BCGs
1	7474	present in 13 BCGs
1	9268	present in 13 BCGs
1	10406	present in 13 BCGs
1	11057	present in 13 BCGs
1	11451	present in 13 BCGs
1	12182	present in 13 BCGs
1	12688	present in 13 BCGs
1	15991	present in 13 BCGs
1	18764	present in 13 BCGs
1	19202	present in 13 BCGs
1	20060	present in 13 BCGs

1	20174	present in 13 BCGs
1	21653	present in 13 BCGs
1	22332	present in 13 BCGs
1	22398	present in 13 BCGs
1	22912	present in 13 BCGs
1	23337	present in 13 BCGs
1	24658	present in 13 BCGs
1	26348	present in 13 BCGs
1	30877	present in 13 BCGs
1	34154	present in 13 BCGs
1	38259	present in 13 BCGs
1	39216	present in 13 BCGs
1	40649	present in 13 BCGs
1	44613	present in 13 BCGs
1	47260	present in 13 BCGs
1	47769	present in 13 BCGs
1	52501	present in 13 BCGs
1	52698	present in 13 BCGs
1	54157	present in 13 BCGs
1	57244	present in 13 BCGs
1	57981	present in 13 BCGs
1	58963	present in 13 BCGs
1	63420	present in 13 BCGs
1	64980	present in 13 BCGs
1	67616	present in 13 BCGs
1	68636	present in 13 BCGs

1	70277	present in 13 BCGs
1	72142	present in 13 BCGs
1	73033	present in 13 BCGs
1	73817	present in 13 BCGs
1	75560	present in 13 BCGs
1	120639	present in 13 BCGs
1	120810	present in 13 BCGs
1	9278	present in 13 BCGs
1	103346	present in 13 BCGs
1	103378	present in 13 BCGs
1	103554	present in 13 BCGs
1	103605	present in 13 BCGs
1	103744	present in 13 BCGs
1	132976	present in 13 BCGs
1	132994	present in 13 BCGs
1	133264	present in 13 BCGs
1	175506	present in 13 BCGs
1	103143	present in 13 BCGs
1	103264	present in 13 BCGs
1	103431	present in 13 BCGs
1	122097	present in 13 BCGs
1	122140	present in 13 BCGs
1	122143	present in 13 BCGs
1	122162	present in 13 BCGs
1	103141	present in 13 BCGs
1	103165	present in 13 BCGs

1	103344	present in 13 BCGs
1	103426	present in 13 BCGs
1	103589	present in 13 BCGs
1	103301	present in 13 BCGs
1	103209	present in 13 BCGs
1	103255	present in 13 BCGs
1	103361	present in 13 BCGs
1	103669	present in 13 BCGs
1	103716	present in 13 BCGs
1	103037	present in 13 BCGs
1	103078	present in 13 BCGs
1	103244	present in 13 BCGs
1	103464	present in 13 BCGs
1	121059	present in 13 BCGs
1	103198	present in 13 BCGs
1	103420	present in 13 BCGs
1	103055	present in 13 BCGs
1	103153	present in 13 BCGs
1	103531	present in 13 BCGs
1	103577	present in 13 BCGs
1	103536	present in 13 BCGs
1	103754	present in 13 BCGs
1	103010	present in 13 BCGs
1	103230	present in 13 BCGs
1	103493	present in 13 BCGs
1	103569	present in 13 BCGs

1	103738	present in 13 BCGs
1	103751	present in 13 BCGs
1	103004	present in 13 BCGs
1	103018	present in 13 BCGs
1	103021	present in 13 BCGs
1	103029	present in 13 BCGs
1	103090	present in 13 BCGs
1	103105	present in 13 BCGs
1	103137	present in 13 BCGs
1	103260	present in 13 BCGs
1	103286	present in 13 BCGs
1	103304	present in 13 BCGs
1	103349	present in 13 BCGs
1	103386	present in 13 BCGs
1	103415	present in 13 BCGs
1	103516	present in 13 BCGs
1	103547	present in 13 BCGs
1	103747	present in 13 BCGs
1	120410	present in 13 BCGs
1	120537	present in 13 BCGs
1	103452	present in 13 BCGs
1	120569	present in 13 BCGs
1	120912	present in 13 BCGs
1	120802	present in 13 BCGs
1	103274	present in 13 BCGs
1	103620	present in 13 BCGs

1	103694	present in 13 BCGs
1	103425	present in 13 BCGs
1	103434	present in 13 BCGs
1	103693	present in 13 BCGs
1	103128	present in 13 BCGs
1	103170	present in 13 BCGs
1	103121	present in 13 BCGs
1	103291	present in 13 BCGs
1	103347	present in 13 BCGs
1	103636	present in 13 BCGs
1	103641	present in 13 BCGs
1	103651	present in 13 BCGs
1	72741	present in 13 BCGs
1	120392	present in 13 BCGs
1	120452	present in 13 BCGs
1	121017	present in 13 BCGs
1	223	present in 13 BCGs
1	503	present in 13 BCGs
1	1545	present in 13 BCGs
1	2695	present in 13 BCGs
1	3400	present in 13 BCGs
1	6323	present in 13 BCGs
1	8688	present in 13 BCGs
1	18700	present in 13 BCGs
1	21096	present in 13 BCGs
1	21797	present in 13 BCGs

1	34776	present in 13 BCGs
1	40165	present in 13 BCGs
1	42790	present in 13 BCGs
1	43332	present in 13 BCGs
1	43514	present in 13 BCGs
1	45250	present in 13 BCGs
1	48646	present in 13 BCGs
1	49421	present in 13 BCGs
1	49872	present in 13 BCGs
1	50442	present in 13 BCGs
1	52026	present in 13 BCGs
1	56895	present in 13 BCGs
1	64079	present in 13 BCGs
1	67697	present in 13 BCGs
1	72314	present in 13 BCGs
1	72515	present in 13 BCGs
1	76584	present in 13 BCGs
1	103272	present in 13 BCGs
1	103457	present in 13 BCGs
1	103530	present in 13 BCGs
1	103532	present in 13 BCGs
1	103578	present in 13 BCGs
1	103668	present in 13 BCGs
1	103729	present in 13 BCGs
1	103732	present in 13 BCGs
1	103067	present in 13 BCGs

1	103283	present in 13 BCGs
1	103355	present in 13 BCGs
1	103479	present in 13 BCGs
1	103501	present in 13 BCGs
1	103537	present in 13 BCGs
1	20662	present in 13 BCGs
1	53355	present in 13 BCGs
1	56043	present in 13 BCGs
1	67156	present in 13 BCGs
1	103130	present in 13 BCGs
1	103180	present in 13 BCGs
1	103718	present in 13 BCGs
1	103731	present in 13 BCGs
1	103296	present in 13 BCGs
1	103338	present in 13 BCGs
1	103472	present in 13 BCGs
1	103548	present in 13 BCGs
1	103687	present in 13 BCGs
1	9474	present in 13 BCGs
1	9475	present in 13 BCGs
1	10022	present in 13 BCGs
1	20281	present in 13 BCGs
1	21497	present in 13 BCGs
1	39354	present in 13 BCGs
1	44231	present in 13 BCGs
1	53833	present in 13 BCGs

1	55157	present in 13 BCGs
1	55158	present in 13 BCGs
1	103393	present in 13 BCGs
1	103116	present in 13 BCGs
1	103197	present in 13 BCGs
1	103247	present in 13 BCGs
1	103162	present in 13 BCGs
1	103002	present in 13 BCGs
1	103118	present in 13 BCGs
1	103262	present in 13 BCGs
1	103267	present in 13 BCGs
1	103082	present in 13 BCGs
1	103746	present in 13 BCGs
1	103185	present in 13 BCGs
1	103246	present in 13 BCGs
1	103384	present in 13 BCGs
1	103476	present in 13 BCGs
1	103480	present in 13 BCGs
1	103490	present in 13 BCGs
1	103612	present in 13 BCGs
1	103629	present in 13 BCGs
1	103700	present in 13 BCGs
1	103125	present in 13 BCGs
1	103756	present in 13 BCGs
1	103017	present in 13 BCGs
1	103031	present in 13 BCGs

1	103179	present in 13 BCGs
1	103566	present in 13 BCGs
1	103677	present in 13 BCGs
1	103703	present in 13 BCGs
1	103112	present in 13 BCGs
1	103549	present in 13 BCGs
1	103717	present in 13 BCGs
1	103755	present in 13 BCGs
1	120587	present in 13 BCGs
1	120630	present in 13 BCGs
1	120878	present in 13 BCGs
1	120961	present in 13 BCGs
1	121057	present in 13 BCGs
1	103359	present in 13 BCGs
1	103403	present in 13 BCGs
1	103708	present in 13 BCGs
1	103102	present in 13 BCGs
1	103297	present in 13 BCGs
1	103432	present in 13 BCGs
1	103022	present in 13 BCGs
1	103469	present in 13 BCGs
1	103645	present in 13 BCGs
1	19562	present in 13 BCGs
1	103482	present in 13 BCGs
1	103664	present in 13 BCGs
1	103534	present in 13 BCGs

1	4132	present in 13 BCGs
1	8900	present in 13 BCGs
1	14574	present in 13 BCGs
1	35316	present in 13 BCGs
1	41071	present in 13 BCGs
1	47209	present in 13 BCGs
1	72294	present in 13 BCGs
1	103013	present in 13 BCGs
1	103695	present in 13 BCGs
1	120887	present in 13 BCGs
1	433	present in 13 BCGs
1	4334	present in 13 BCGs
1	4990	present in 13 BCGs
1	8464	present in 13 BCGs
1	25315	present in 13 BCGs
1	42633	present in 13 BCGs
1	58022	present in 13 BCGs
1	67607	present in 13 BCGs
1	71346	present in 13 BCGs
1	105967	present in 13 BCGs
1	105976	present in 13 BCGs
1	38439	present in 13 BCGs
1	46806	present in 13 BCGs
1	1522	present in 13 BCGs
1	3402	present in 13 BCGs
1	17838	present in 13 BCGs

1	39011	present in 13 BCGs
1	49333	present in 13 BCGs
1	51790	present in 13 BCGs
1	70010	present in 13 BCGs
1	98793	present in 13 BCGs
1	98906	present in 13 BCGs
1	103697	present in 13 BCGs
1	103176	present in 13 BCGs
1	103331	present in 13 BCGs
1	103510	present in 13 BCGs
1	103245	present in 13 BCGs
1	103340	present in 13 BCGs
1	103649	present in 13 BCGs
1	103208	present in 13 BCGs
1	103258	present in 13 BCGs
1	103511	present in 13 BCGs
1	120408	present in 13 BCGs
1	120428	present in 13 BCGs
1	98728	present in 13 BCGs
1	98784	present in 13 BCGs
1	98852	present in 13 BCGs
1	103284	present in 13 BCGs
1	103385	present in 13 BCGs
1	63850	present in 13 BCGs
1	25138	present in 13 BCGs
1	61020	present in 13 BCGs

1	20198	present in 13 BCGs
1	61340	present in 13 BCGs
1	55967	present in 13 BCGs
1	71325	present in 13 BCGs
1	7311	present in 13 BCGs
1	103339	present in 13 BCGs
2	103579	changed in 13 BCGs
2	103462	changed in 13 BCGs
2	103061	changed in 13 BCGs
2	103227	changed in 13 BCGs
2	9924	A point mutation in 13 BCGs
2	120511	A point mutation in 13 BCGs
2	103365	2 SNPs in 13 BCGs
2	103503	2 SNPs in 13 BCGs
2	103007	3 SNPs in 13 BCGs
2	18898	A point mutation in 13 BCGs
2	10841	A point mutation in 13 BCGs
2	103266	A point mutation in 13 BCGs
2	120892	A point mutation in 13 BCGs
2	103352	A point mutation in 13 BCGs
2	103038	9 SNPs in 13 BCGs
3	120399	lost in 13 BCGs
3	21765	lost in 13 BCGs
3	27635	lost in 13 BCGs
3	41948	lost in 13 BCGs
3	66693	lost in 13 BCGs

3	4556	lost in 13 BCGs
3	187	lost in 13 BCGs
3	655	lost in 13 BCGs
3	3934	lost in 13 BCGs
3	21422	lost in 13 BCGs
3	28505	lost in 13 BCGs
3	32971	lost in 13 BCGs
3	33831	lost in 13 BCGs
3	34927	lost in 13 BCGs
3	37040	lost in 13 BCGs
3	41028	lost in 13 BCGs
3	50549	lost in 13 BCGs
3	103519	lost in 13 BCGs
3	120421	lost in 13 BCGs
3	60	lost in 13 BCGs
3	35139	lost in 13 BCGs
3	46500	lost in 13 BCGs
3	52048	lost in 13 BCGs
3	61578	lost in 13 BCGs
3	120550	lost in 13 BCGs
3	120870	lost in 13 BCGs
4	120441	lost in 8 BCGs
4	120788	lost in 8 BCGs
4	22997	lost in 8 BCGs
4	24522	lost in 8 BCGs
4	44381	lost in 8 BCGs

4	103145	lost in 8 BCGs
4	103525	lost in 8 BCGs
4	103635	lost in 8 BCGs
4	103661	lost in 8 BCGs
4	103327	lost in 8 BCGs
4	103348	lost in 8 BCGs
4	103686	lost in 8 BCGs
4	120777	lost in 8 BCGs
5	41952	lost in BCG-Swedens
5	53107	lost in BCG-Phipps
5	53303	5 base deletion in BCG-Phipps
5	73020	2 base deletion in BCG-Phipps
5	48905	11 base deletion in BCG-Phipps
5	6825	8 base deletion in BCG-Phipps
5	49246	14 base deletion in BCG-Phipps
5	55523	lost in BCG-Phipps
5	55706	17 base deletion in BCG-Phipps
5		A point mutation in BCG-Moreau, BCG-Russia and BCG-Tice, 3 SNPs and 3 base
5	94762	deletion in BCG-Prague
5	120904	lost in BCG-Phipps, 21 base deletion in BCG-Prague
5	22387	A point mutation in BCG-Phipps, BCG-Prague, BCG-Russia, BCG-Tice
5	103371	A point mutation in BCG-Glaxo
5	103633	Single-base insert in BCG-Phipps
5	7472	Single-base insert in BCG-Phipps
5	103659	Single-base insert in BCG-Phipps
5	120481	Single base deletion in BCG-Moreau

5	103373	Single base deletion in BCG-Moreau
5	103737	Single base deletion in BCG-Moreau
5	103000	17 base deletion in BCG-Prague
5	103199	8 base deletion in BCG-Prague
5	103720	Single base deletion in BCG-Moreau
5	103195	Single base deletion in BCG-Moreau
