

TABLE S1

Ig L Chain V Region Characteristics of IgM⁺ B-CLL Cases

IgM ⁺ CLL No.	GenBank AC number	V _L Family	Most Homologous Germline V _L Gene	% V _L Gene Differen ce	Probability that R Mutations Occurred by Chance ^A		J _L Gene ^E	LCDR3 Length	LCDR3 Sequence and Charged Residues ^B	Number of Charged Residues in LCDR3			LCDR3 Estimated pI ^C		
					CDR	FR				+	-	Total			
002	AY043102	κI	IGKV1-33	O18/O8	0.0	-	-	Jκ4	10	QQYDNLPP	VT	0	1	1	3.43
007	AJ697894	κI	IGKV1-39	O12/O2	0.0	-	-	Jκ4	9	QQSYSTP	AT	1	0	1	7.00
008	AY043104	κI	IGKV1-33	O18/O8	0.0	-	-	Jκ4	9	QQYDNLPP	LT	0	1	1	3.43
011	AY043105	κI	IGKV1-39	O12/O2	0.0	-	-	Jκ1	11	QQSYSTPPT	WT	0	0	0	5.50
019	AY043109	κI	IGKV1-8	L9	5.6	0.0216 ^D	0.0738	Jκ1	9	QQFYGDPR	T	1	1	2	5.96
023	AY043112	κI	IGKV1-5	L12	0.0	-	-	Jκ2	9	QQYNSYSK	T	1	0	1	8.73
038	AY043117	κI	IGKV1-5	L12	5.3	0.2177	0.0960	Jκ2	10	QQYNSYSG	YT	0	0	0	5.50
042	AY043119	κI	IGKV1-33	O18/O8	0.0	-	-	Jκ2	10	QQYDNLPP	YT	0	1	1	3.43
047	AY043120	κI	IGKV1-12	L5	0.0	-	-	Jκ1	9	QQANSFP	WT	0	0	0	5.50
048	AY043121	κI	IGKV1-9	L8	5.7	0.2267	0.1610	Jκ2	10	RQQLNSYPH	T	2	0	2	9.05
066	AY043130	κI	IGKV1-39	O12/O2	0.3	-	-	Jκ2	10	QQSYSTPP	WT	0	0	0	5.50
079	AY043133	κI	IGKV1-39	O12/O2	0.0	-	-	Jκ1	10	QQSYSTPG	WT	0	0	0	5.50
081	AY043134	κI	IGKV1D-8	L24	6.7	0.2195	0.0203 ^D	Jκ1	9	QQYYSFP	WT	0	0	0	5.50
087	AY043137	κI	IGKV1-39	O12/O2	7.6	0.0153 ^D	0.0278 ^D	Jκ1	9	QQTYTTP	RT	1	0	1	9.05
088	AY043138	κI	IGKV1-27	A20	5.2	0.1423	0.0985	Jκ1	9	QKYNSAP	WT	1	0	1	8.80
093	AY043139	κI	IGKV1-27	A20	4.9	0.1717	0.0091 ^D	Jκ4	9	QKYDSAP	LT	1	1	2	5.95
108	AY043144	κI	IGKV1-5	L12	3.2	0.3054	0.1114	Jκ3	10	QQYNSYSG	FT	0	0	0	5.50
110	AY043145	κI	IGKV1-39	O12/O2	4.9	0.1463	0.0721	Jκ4	9	QQSYNSP	SF	0	0	0	5.50
112	AY043146	κI	IGKV1-33	O18/O8	0.4	-	-	Jκ4	10	QQYDNLPS	LT	0	1	1	3.43
119	AY043148	κI	IGKV1-39	O12/O2	0.7	-	-	Jκ2	10	QQSYSTPP	WT	0	0	0	5.50
122	AY043150	κI	IGKV1-39	O12/O2	0.0	-	-	Jκ2	10	QQSYSTPP	YT	0	0	0	5.50
124	AJ697895	κI	IGKV1-39	O12/O2	9.3	0.0432 ^D	0.0334 ^D	Jκ2	9	HQSCTTP	YT	1	0	1	7.00
138	AY043158	κI	IGKV1-9	L8	4.9	0.0893	0.0085 ^D	Jκ5	9	QQVYSYP	IT	0	0	0	5.50
141	AY043160	κI	IGKV1-27	A20	0.3	-	-	Jκ2	11	QKYNSAPRM	YT	2	0	2	9.70
153	AY043163	κI	IGKV1D-13	L18	6.6	0.0237 ^D	0.0029 ^D	Jκ5	8	QQINNS	PA	0	0	0	5.50
154	AY043164	κI	IGKV1-39	O12/O2	0.0	-	-	Jκ1	10	QQSYSTPP	WT	0	0	0	5.50

216	AJ697898	κI	IGKV1-17	A30	0.0	-	-	Jκ1	9	LQHNSYP	<u>RT</u>	2	0	2	9.05
249	AJ697899	κI	IGKV1-8	L9	0.0	-	-	Jκ1	9	QQYYSYP	<u>RT</u>	1	0	1	8.79
266	AY574939	κI	IGKV1-39	O12/O2	0.0	-	-	Jκ2	10	QQSYSTPP	<u>KT</u>	1	0	1	8.80
270	AY574940	κI	IGKV1-39	O12/O2	0.0	-	-	Jκ2	10	QQSYSTPP	YT	0	0	0	5.50
284	AJ697900	κI	IGKV1-8	L9	1.4	-	-	Jκ1	9	QQYYSYP	<u>RT</u>	0	0	0	8.79
302	AJ697902	κI	IGKV1-33	O18/O8	0.0	-	-	Jκ3	9	QQYDNLP	PL	0	1	1	3.43
331	AM181297	κI	IGKV1-8	L9	4.9	0.1987	0.1471	Jκ2	9	QQYYNFP	YT	0	0	0	5.50
336	AY574942	κI	IGKV1-39	O12/O2	1.4	-	-	Jκ2	10	QQSYSSPP	YT	0	0	0	5.50
355	AJ697904	κI	IGKV1-5	L12	0.0	-	-	Jκ1	8	QQYNSY	QT	0	0	0	5.50
357	AJ697905	κI	IGKV1-33	O18/O8	0.0	-	-	Jκ4	10	QQYDNLPR	LT	1	1	2	5.96
360	AY574945	κI	IGKV1-39	O12/O2	0.0	-	-	Jκ2	10	QQSYSTPP	YT	0	0	0	5.50
364	AM181298	κI	IGKV1-27	A20	2.5	0.3933	0,1856	Jκ3	9	QKYNGAP	DT	1	1	2	5.95
377	AJ697908	κI	IGKV1-33	O18/O8	5.6	0.0268 ^D	0.0102 ^D	Jκ2	10	QQYGSSP	PT	0	0	0	7.00
394	AJ697909	κI	IGKV1-33	O18/O8	0.0	-	-	Jκ3	10	QQYDNLPS	FT	0	1	1	3.43
403	AM181300	κI	IGKV1-39	O12/O2	0.3	-	-	Jκ2	11	QQSYSTLPR	CS	1	0	1	9.05
415	AM181302	κI	IGKV1-39	O12/O2	0.0	-	-	Jκ2	10	QQSYSTPP	<u>HT</u>	1	0	1	7.00
G009	AJ698329	κI	IGKV1-33	O18/O8	0.0	-	-	Jκ2	9	QQYDNLP	PT	0	1	1	3.43
G014	AJ633630	κI	IGKV1-39	O12/O2	0.0	-	-	Jκ2	10	QQSYSTPP	<u>RT</u>	1	0	1	9.05
G019	AM181149	κI	IGKV1-27	A20	3.2	0.2045	0.2354	Jκ1	9	QNYDSAP	WT	0	1	1	3.43
G021	AM181151	κI	IGKV1-5	L12	4.5	0.3003	0.1549	Jκ1	11	QQYSVYSPT	GT	0	0	0	5.50
G022	AJ698332	κI	IGKV1-39	O12/O2	6.0	0.0256 ^D	0.0006 ^D	Jκ1	9	QQSFSVL	WT	0	0	0	5.50
G027	AJ698333	κI	IGKV1D-8	L24	5.3	0.0837	0.0079 ^D	Jκ5	9	QHYYTYP	IT	1	0	1	6.99
G034	AM181153	κI	IGKV1-12	L5	0.0	-	-	Jκ1	10	QQANSFPP	WT	0	0	0	5.50
G036	AM181154	κI	IGKV1-13	L4	2.8	0.2832	0.2917	Jκ3	9	QQFNYP	FT	0	0	0	5.50
GE083	AM181157	κI	IGKV1-5	L12	6.0	0.2481	0.2002	Jκ2	9	QQYESYP	YT	0	1	1	3.62
GE137	AM181159	κI	IGKV1-33	O18/O8	0.0	-	-	Jκ2	10	QQYDNLPP	YT	0	1	1	3.43
GE154	AM181161	κI	IGKV1-12	L5	1.1	-	-	Jκ2	9	QQANSFP	FT	0	0	0	5.50
GN02	AJ388641	κI	IGKV1-27	A20	0.0	-	-	Jκ2	13	QQYDNLPPWAS	YT	0	1	1	3.43
GN04	AJ388643	κI	IGKV1-39	O12/O2	0.0	-	-	Jκ1	10	QQSYSTPR	LT	1	0	1	9.05
GN05	AJ388644	κI	IGKV1-6	L11	4.9	0.1762	0.1352	Jκ1	8	QDYNYP	A	1	1	2	5.95
GN06	AJ388645	κI	IGKV1-5	L12	4.2	0.1502	0.2096	Jκ1	9	QQYNSYP	WT	0	0	0	5.50
GN19	AJ388651	κI	IGKV1-16	L1	2.8	9.66E-05 ^D	0.0037 ^D	Jκ5	9	RHYKTYP	IT	3	0	3	9.70
GN29	AJ388656	κI	1/OR2-108	V108	7.7	0.1857	0.0004 ^D	Jκ2	9	LQDYTVP	YT	0	1	1	3.43
GN30	AJ388657	κI	IGKV1-12	L5	0.0	-	-	Jκ1	9	QQANSFPR	T	1	0	1	10.24
RC014	AM181165	κI	IGKV1-39	O12/O2	0.0	-	-	Jκ2	10	QQSYSTPP	YT	0	0	0	5.50

017	AY043107	κII	IGKV2-28	A19/A3	0.0	-	-	Jκ4	9	MQALQTP	LT	0	0	0	5.50
021	AY043111	κII	IGKV2-24	A23	4.0	0.2507	0.1723	Jκ4	8	MQTT <u>HF</u>	PS	1	0	1	7.00
056	AY043123	κII	IGKV2-30	A17	0.7	-	-	Jκ3	11	MQGT <u>HWP</u> <u>RG</u>	FT	2	0	2	10.24
059	AY043125	κII	IGKV2-24	A23	0.0	-	-	Jκ2	10	MQATQFP	YT	0	0	0	5.50
071	AY043132	κII	IGKV2-40	O11/O1	0.7	-	-	Jκ3	9	MQ <u>RI</u> EF	FT	1	1	2	6.14
125	AY043152	κII	IGKV2-24	A23	2.0	0.2832	0.2104	Jκ2	11	MQATQFPV	YI	0	0	0	5.50
165	AM181294	κII	IGKV2-28	A19/A3	1.0	-	-	Jκ1	9	MQALQTP	WT	0	0	0	5.50
288	AJ697901	κII	IGKV2-28	A19/A3	0.0	-	-	Jκ5	9	MQALQTP	LT	0	0	0	5.50
321	AM181296	κII	IGKV2-24	A23	0.0	-	-	Jκ2	9	MQATQFP	YT	0	0	0	5.50
G008	AJ698328	κII	IGKV2-24	A23	0.0	-	-	Jκ2	10	MQATQFPL	YT	0	0	0	5.50
G011	AJ698330	κII	IGKV2-30	A17	0.0	-	-	Jκ1	9	MQGT <u>HWP</u>	PG	1	0	1	7.00
G020	AM181150	κII	IGKV2-28	A19/A3	1.3	-	-	Jκ1	9	CMQALQTP	<u>RT</u>	1	0	1	10.24
GE128	AM181158	κII	IGKV2-30	A17	3.3	0.2922	0.0947	Jκ2	10	MQGT <u>HWP</u>	YT	1	0	0	7.00
GE156	AM181162	κII	IGKV2D-29	A2a/A2c	6.4	0.1829	0.1806	Jκ4	9	MQST <u>HLP</u>	VT	1	0	0	7.00
GE260	AM181163	κII	IGKV2-30	A17	2.7	0.3096	0.1959	Jκ2	9	MQGT <u>HWP</u>	FT	1	0	0	7.00
GN03	AJ388642	κII	IGKV2-28	A19/A3	0.0	-	-	Jκ4	9	MQALQTP	PT	0	0	0	5.50
GN07	AJ388646	κII	IGKV2-28	A19/A3	0.0	-	-	Jκ4	9	MQALQTP	LT	0	0	0	5.50
GN13	AJ388648	κII	IGKV2-28	A19/A3	0.0	-	-	Jκ4	10	MQALQTP	LT	0	0	0	5.50
GN18	AJ388650	κII	IGKV2-28	A19/A3	0.0	-	-	Jκ3	9	MQALQTL	FT	0	0	0	5.50
GN28	AJ388655	κII	IGKV2-30	A17	0.0	-	-	Jκ2	11	MQGT <u>HWP</u>	NT	1	0	1	7.00
003	AY043103	κIII	IGKV3-20	A27	5.1	0.2492	0.1671	Jκ3	12	QQYQYGR <u>SPL</u>	FT	1	0	1	8.89
018	AY043108	κIII	IGKV3-20	A27	4.5	0.1652	0.0170 ^D	Jκ1	9	QQYST <u>SPR</u>	T	1	0	1	9.05
026	AY043114	κIII	IGKV3-20	A27	0.0	-	-	Jκ5	8	QQYGSS	PT	0	0	0	5.50
035	AY043116	κIII	IGKV3-15	L2	6.6	0.1705	0.0218 ^D	Jκ4	10	QQY <u>NR</u> WPL	VT	1	0	1	9.05
061	AY043126	κIII	IGKV3-20	A27	7.0	0.0088 ^D	0.0011 ^D	Jκ2	9	QQYGSSP	YT	0	0	0	5.50
064	AY043128	κIII	IGKV3-11	L6	0.3	-	-	Jκ1	10	QQ <u>RS</u> NWPP	WT	1	0	1	10.24
067	AY043131	κIII	IGKV3-11	L6	0.0	-	-	Jκ1	9	QQ <u>RS</u> NWP	QT	1	0	1	10.24
068	AY574935	κIII	IGKV3-20	A27	0.0	-	-	Jκ4	8	QQYGSS	PT	0	0	0	5.50
083	AY043135	κIII	IGKV3-15	L2	2.1	0.4093	0.3380	Jκ2	9	QQYNNWP	YT	0	0	0	5.50
094	AY043140	κIII	IGKV3-11	L6	2.8	0.3249	0.1699	Jκ1	9	QQ <u>RS</u> NWP	<u>RT</u>	2	0	2	12.48
118	AY043147	κIII	IGKV3-20	A27	2.4	0.1249	0.1197	Jκ1	9	QQYGSS <u>PR</u>	T	1	0	1	9.05
135	AY043156	κIII	IGKV3-15	L2	3.5	0.1837	0.1128	Jκ1	9	<u>HHY</u> NNW <u>PR</u>	T	3	0	3	9.05
178	AJ697897	κIII	IGKV3-15	L2	1.1	-	-	Jκ1	10	QQYNNWPP	WG	0	0	0	5.50

215	AY043165	κIII	IGKV3-15	L2	5.2	0.1107	0.0490 ^D	Jκ1	10	QQYSNWPP	WT	0	0	0	5.50
258	AY574938	κIII	IGKV3-20	A27	0.0	-	-	Jκ1	9	QQYGSSP	GT	0	0	0	5.50
263	AY043087	κIII	IGKV3-15	L2	0.0	-	-	Jκ2	10	QQYNNWPL	YT	0	0	0	5.50
334	AJ697903	κIII	IGKV3-20	A27	0.0	-	-	Jκ2	9	QQYGSSP	CS	0	0	0	5.50
358	AJ697906	κIII	IGKV3-20	A27	4.5	0.2489	0.0033 ^D	Jκ1	9	QQYGSSP	PT	0	0	0	5.50
365	AJ697907	κIII	IGKV3-20	A27	3.9	0.1574	0.1750	Jκ5	9	QQYVNSP	MT	0	0	0	5.50
408	AM181301	κIII	IGKV3-20	A27	0.0	-	-	Jκ1	10	QQYGSSPP	WT	0	0	0	5.50
606	AM181304	κIII	IGKV3-20	A27	5.5	0.0720	0.0155 ^D	Jκ4	9	QQSGRSS	LT	1	0	1	10.24
G006	AM181148	κIII	IGKV3-15	L2	0.0	-	-	Jκ2	10	QQYNNWPP	YT	0	0	0	5.50
G013	AJ698331	κIII	IGKV3-11	L6	0.0	-	-	Jκ3	6	QQRS	NG	1	0	1	10.24
G025	AM181152	κIII	IGKV3-15	L2	4.2	0.0793	0.2357	Jκ1	10	QQYNNWPP	RT	1	0	1	9.05
GN08	AJ388647	κIII	IGKV3-20	A27	0.0	-	-	Jκ4	9	QQYGSSP	LT	0	0	0	5.50
GN14	AJ388649	κIII	IGKV3-20	A27	4.2	0.1445	0.0071 ^D	Jκ2	9	QQYGSSP	YT	0	0	0	5.50
GN22	AJ388652	κIII	IGKV3-15	L2	0.0	-	-	Jκ4	10	QQYNNWPP	LT	0	0	0	5.50
GN27	AJ388654	κIII	IGKV3-11	L6	6.0	0.0632	0.1299	Jκ2	9	QQRNWPL	YT	1	0	1	9.05
MF09	AM181145	κIII	IGKV3-20	A27	1.0	-	-	Jκ5	9	QQYGSSP	PT	0	0	0	5.50
RC012	AM181164	κIII	IGKV3-20	A27	3.8	0.1799	0.2106	Jκ1	9	HQYGTSP	DT	0	1	1	4.96
085	AY043136	κIV	IGKV4-1	B3	1.3	-	-	Jκ4	9	QQYYSSP	LT	0	0	0	5.50
121	AY043149	κIV	IGKV4-1	B3	4.0	0.0919	0.0017 ^D	Jκ4	9	QQYYDTP	LT	0	1	1	3.43
127	AY043154	κIV	IGKV4-1	B3	4.3	0.1135	0.2164	Jκ1	9	QQYFGTP	WT	0	0	0	5.50
156	AJ697896	κIV	IGKV4-1	B3	0.0	-	-	Jκ2	10	QQYYSTPL	YT	0	0	0	5.50
G040	AM181155	κIV	IGKV4-1	B3	0.0	-	-	Jκ1	9	QQYYSTP	QT	0	0	0	5.50
G041	AM181156	κIV	IGKV4-1	B3	5.8	0.3038	0.2326	Jκ1	9	HQYYSTP	PT	1	0	1	7.00
GE151	AM181160	κIV	IGKV4-1	B3	0.0	-	-	Jκ4	9	QQYYSTP	LT	0	0	0	5.50
483	AJ697910	κVI	IGKV6-21	A26	0.7	-	-	Jκ1	9	HQSSSLP	WT	1	0	1	7.00
025	AY043113	λI	IGLV1-51	1b	1.0	-	-	Jλ2/3	11	GTWDSLSA	VV	0	1	1	3.43
058	AY043124	λI	IGLV1-44	1c	0.0	-	-	Jλ1	13	AAWDDSLNGPF	YV	0	2	2	3.22
065	AY043129	λI	IGLV1-44	1c	4.4	0.1004	0.0074 ^D	Jλ3	11	AAWDDSLTA	VV	0	2	2	3.22
100	AY043142	λI	IGLV1-51	1b	1.7	-	-	Jλ3	11	GTWDNSLSP	VV	0	1	1	3.43
169	AM181295	λI	IGLV1-44	1c	1.0	-	-	Jλ3	11	AAWDDSLNG	WV	0	2	2	3.22
CU002	AM181147	λI	IGLV1-51	1b	0.0	-	-	Jλ2/3	11	GTWDSLSA	VV	0	1	1	3.43

G001	AM181362	λI	IGLV1-40	1e	3.7	0.0707	0.1221	Jλ3	11	QSYD <u>RL</u> SGS	GV	1	1	2	5.96
G002	AJ698334	λI	IGLV1-36	1a	0.0	-	-	Jλ1	11	AAW <u>DD</u> SLNG	YV	0	2	2	3.22
G018	AM181366	λI	IGLV1-40	1e	4.4	0.1810	0.2230	Jλ3	12	QSYD <u>T</u> SLSGS	LV	0	1	1	3.43
GN12	AJ388661	λI	IGLV1-44	1c	0.0	-	-	Jλ1	9	AAW <u>DD</u> SL	NG	0	2	2	3.22
GN21	AJ388664	λI	IGLV1-40	1e	5.4	0.1000	0.0406 ^D	Jλ2/3	11	QSYD <u>N</u> SLTA	WV	0	1	1	3.43
RF22	AM181146	λI	IGLV1-44	1c	0.0	-	-	Jλ3	11	AAW <u>DD</u> SLNG	<u>RV</u>	1	2	3	3.95
126	AY043153	λII	IGLV2-11	2e	3.1	0.1259	0.2723	Jλ3	10	CSYAGSYT	WV	0	0	0	5.50
129	AY043155	λII	IGLV2-14	2a2	0.7	-	-	Jλ3	11	SSYT <u>S</u> SST <u>H</u>	WV	1	0	1	7.00
147	AY043161	λII	IGLV2-23	2b2	6.8	0.0106 ^D	0.0002 ^D	Jλ3	10	SSYV <u>H</u> SST	WV	1	0	1	7.00
152	AY043162	λII	IGLV2-11	2e	0.0	-	-	Jλ3	10	CSYAGSYI	WV	0	0	0	5.50
172	AJ697911	λII	IGLV2-8	2c	2.4	0.2935	0.2571	Jλ3	9	SSYAGSN	<u>KI</u>	1	0	1	8.80
G023	AM181367	λII	IGLV2-11	2e	4.1	0.1455	0.1458	Jλ3	10	CSYAGSYS	WV	0	0	0	5.50
G030	AM181369	λII	IGLV2-14	2a2	6.4	0.1218	0.1043	Jλ3	10	SSFTSST	LV	0	0	0	5.50
G037	AM181371	λII	IGLV2-8	2c	3.0	0.3089	0.0260 ^D	Jλ2/3	13	SSYAGNNNL <u>G</u> D	VL	0	1	1	3.43
GE080	AM181373	λII	IGLV2-14	2a2	0.0	-	-	Jλ2/3	11	SSYT <u>S</u> SSTL	VV	0	0	0	5.50
GN09	AJ388659	λII	IGLV2-14	2a2	3.7	0.0072 ^D	0.0118 ^D	Jλ1	11	SSYTNTNTL	YV	0	0	0	5.50
014	AY043106	λIII	IGLV3-1	3r	0.0	-	-	Jλ1	11	QAW <u>D</u> SSTC	YV	0	2	2	3.22
020	AY043110	λIII	IGLV3-1	3r	1.1	-	-	Jλ2/3	9	QAW <u>D</u> SST	VV	0	1	1	3.43
027	AY043115	λIII	IGLV3-25	3m	0.7	-	-	Jλ1	12	QSADSSGTYL	YV	0	1	1	3.43
041	AY043118	λIII	IGLV3-21	3h	0.3	-	-	Jλ2/3	11	QVW <u>D</u> SSSD <u>H</u>	VV	1	2	3	3.94
051	AY043122	λIII	IGLV3-25	3m	0.0	-	-	Jλ2/3	10	QSADSSGI	VV	0	1	1	3.43
105	AY043143	λIII	IGLV3-21	3h	2.1	0.0380 ^D	0.2179	Jλ1	12	QVW <u>D</u> SSSDLP	YV	0	2	2	3.22
123	AY043151	λIII	IGLV3-1	3r	0.4	-	-	Jλ1	9	QAW <u>D</u> SSTE	V	0	2	2	3.32
136	AY043157	λIII	IGLV3-19	3l	4.2	0.2506	0.0901	Jλ3	11	NS <u>R</u> DSSD <u>N</u> R	VL	2	2	4	6.10
139	AY043159	λIII	IGLV3-1	3r	4.7	0.1116	0.0907	Jλ3	9	QAW <u>D</u> SNS	WV	0	1	1	3.43
175	AY574936	λIII	IGLV3-21	3h	0.0	-	-	Jλ3	12	QVW <u>D</u> SSSD <u>H</u> P	WV	1	2	3	3.94
282	AY574941	λIII	IGLV3-21	3h	1.0	-	-	Jλ3	12	QVW <u>D</u> SSSD <u>H</u> P	WV	1	2	3	3.94
362	AJ697912	λIII	IGLV3-25	3m	2.1	0.0923	0.0100 ^D	Jλ3	10	QST <u>D</u> SSGT	WV	0	1	1	3.43
374	AM181299	λIII	IGLV3-19	3l	1.4	-	-	Jλ1	11	NS <u>R</u> DSSG <u>N</u> H	YV	2	1	3	7.00
412	AY574946	λIII	IGLV3-21	3h	0.7	-	-	Jλ3	12	QVW <u>D</u> SSSD <u>H</u> P	WV	1	2	3	3.94
417	AJ697913	λIII	IGLV3-10	3p	0.0	-	-	Jλ3	11	YST <u>D</u> SSG <u>N</u> H	WV	1	1	2	4.96
561	AM181303	λIII	IGLV3-25	3m	0.0	-	-	Jλ2/3	11	QSADSSGTY	VV	0	1	1	3.43
G003	AM181363	λIII	IGLV3-21	3h	1.7	-	-	Jλ3	12	QVW <u>D</u> SGSD <u>H</u> P	WV	1	2	3	3.94

G005	AJ698336	λIII	IGLV3-9	3j	0.3	-	-	Jλ3	9	<u>QVWDSSH</u>	WV	0	1	1	4.96
G007	AJ698337	λIII	IGLV3-21	3h	1.7	-	-	Jλ3	12	<u>QVWDSSGSDLP</u>	WL	0	2	2	3.22
G010	AM181364	λIII	IGLV3-21	3h	2.8	0.2773	0.0114 ^D	Jλ3	12	<u>QVWDSSSDQP</u>	WV	0	2	2	3.22
G026	AJ698338	λIII	IGLV3-21	3h	0.0	-	-	Jλ3	11	<u>QVWDSSSDH</u>	WV	1	2	3	3.94
GE146	AM181375	λIII	IGLV3-21	3h	0.3	-	-	Jλ1	12	<u>QVWDSSSDLP</u>	YV	0	2	2	3.22
GE211	AM181376	λIII	IGLV3-21	3h	0.0	-	-	Jλ2/3	11	<u>QVWDSSSDH</u>	VV	1	2	3	3.94
GN11	AJ388660	λIII	IGLV3-21	3h	1.7	-	-	Jλ3	12	<u>QVWDSSSDHP</u>	WV	1	2	3	3.94
GN24	AJ388665	λIII	IGLV3-21	3h	1.7	-	-	Jλ3	12	<u>QVWDSSSDHP</u>	WV	1	2	3	3.94
GN25	AJ388666	λIII	IGLV3-21	3h	0.0	-	-	Jλ2/3	11	<u>QVWDSSSDH</u>	VV	1	2	3	3.94
RC088	AM181378	λIII	IGLV3-1	3r	0.0	-	-	Jλ2/3	11	<u>QAWDSSTAD</u>	VV	0	2	2	3.22
G004	AJ698335	λV	IGLV5-45	5c	0.0	-	-	Jλ2/3	9	<u>MIWHSSA</u>	VV	0	2	2	7.00
G015	AM181365	λVII	IGLV7-43	7a	3.7	0.2044	0.0651	Jλ2/3	12	<u>LLYYGGAQLN</u>	VV	0	0	0	5.50
G029	AM181368	λVII	IGLV7-43	7a	7.9	0.0320 ^D	0.1690	Jλ3	9	<u>LLYYNYS</u>	WV	0	0	0	5.50
GE136	AM181374	λVII	IGLV7-46	7b	6.1	0.2422	0.0729	Jλ3	9	<u>LLFYGNT</u>	WV	0	0	0	5.50
GN20	AJ388663	λVII	IGLV7-43	7a	0.0	-	-	Jλ1	11	<u>LLYYGGAQH</u>	YV	1	0	1	6.99
GE265	AM181377	λVIII	IGLV8-61	8a	0.0	-	-	Jλ3	11	<u>VLYMGSGMY</u>	GV	0	0	0	5.50
GN17	AJ388662	λVIII	IGLV8-61	8a	1.7	-	-	Jλ1	10	<u>VLYMGSGV</u>	YL	0	0	0	5.50
063	AY043127	λX	IGLV10-54	10a	1.4	-	-	Jλ2/3	11	<u>SAWDSSLSA</u>	PV	0	1	1	3.43
099	AY043141	λX	IGLV10-54	10a	1.3	-	-	Jλ3	11	<u>SAWDSSLSA</u>	WV	0	1	1	3.43
G035	AM181370	λX	IGLV10-54	10a	4.1	0.2539	0.1808	Jλ3	11	<u>SAWDSSLSA</u>	WV	0	1	1	3.43
G039	AM181372	λX	IGLV10-54	10a	2.7	0.3080	0.0259 ^D	Jλ3	11	<u>SAWDSSLSA</u>	WV	0	1	1	3.43

^A Calculated according to Chang and Casali using a binomial probability model to evaluate whether the excess of R mutations in CDR or the scarcity in FR was due to chance (26).

^B Amino acids on left contributed by V segment; those on right by J segment. Positively charged aa are italicized and underlined; negatively charged residues are represented in bold type.

^C Calculated from the deduced aa sequence using MacVector software, version 7.0.

^D Denotes statistically significant difference (P<0.05).

^E Jλ3 indicates the use of the Jλ3*02 allele, Jλ2/3 indicates the use of gene Jλ3*01 or Jλ2*01 since they are identical.