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Clone ID	Mouse ID	preliminary isotype ID	Immunization scheme (prime-boost)	APRIL Binding (ELISA, A ₄₅₀)		% Blocking		Receptor
				Human APRIL	Mouse APRIL	Human APRIL	Mouse APRIL	
01-001	B-001-R	IgG1	(H-H-H-H)	0.75	0.09	82.0	<10	
01-002	B-001-R	IgG1	(H-H-H-H)	0.94	1.67	91.4	<10	
01-019	B-001-R	IgG1	(H-H-H-H)	0.74	0.08	94.4	<10	
01-035	B-001-R		(H-H-H-H)	0.46	0.08	62.7	<10	
01-037	B-001-R	IgG1	(H-H-H-H)	0.98	0.12	93.8	<10	
01-056	B-001-R		(H-H-H-H)	1.43	0.64	93.5	<10	
01-059	B-001-R	IgG1	(H-H-H-H)	0.97	0.13	92.7	<10	
01-062	B-001-R		(H-H-H-H)	2.02	0.19	62.3	<10	
01-063	B-001-R		(H-H-H-H)	2.15	0.58	61.3	<10	
01-064	B-001-R	IgG1	(H-H-H-H)	2.12	0.71	12.8	<10	
01-077	B-001-R	IgG1	(H-H-H-H)	1.08	0.08	16.4	<10	
01-079	B-001-R		(H-H-H-H)	0.33	0.07	12.1	<10	
01-081	B-001-R	IgG2b	(H-H-H-H)	1.55	0.28	93.9	<10	
01-086	B-001-R	IgG2b	(H-H-H-H)	1.88	0.67	70.7	<10	
01-089	B-001-R	IgG1	(H-H-H-H)	1.06	0.15	94.6	<10	
01-093	B-001-R		(H-H-H-H)	0.49	0.08	14.5	<10	
01-097	B-001-R		(H-H-H-H)	2.43	1.30	13.1	<10	
01-099	B-001-R		(H-H-H-H)	2.45	0.47	12.1	<10	
01-100	B-001-R		(H-H-H-H)	2.20	0.27	16.2	<10	
01-101	B-001-R	IgG2b	(H-H-H-H)	1.12	0.37	50.1	<10	
01-102	B-001-R		(H-H-H-H)	1.87	0.70	22.5	<10	
01-103	B-001-R		(H-H-H-H)	2.43	2.02	14.9	<10	
01-104	B-001-R	IgG1	(H-H-H-H)	1.86	2.33	20.6	<10	
01-105	B-001-R	IgG2b	(H-H-H-H)	1.34	0.51	79.3	14.7	
01-107	B-001-R		(H-H-H-H)	2.20	0.30	46.6	<10	
01-109	B-001-R	IgG1	(H-H-H-H)	1.14	0.13	93.4	<10	
01-110	B-001-R		(H-H-H-H)	1.34	0.13	14.3	<10	
01-111	B-001-R	IgG2a	(H-H-H-H)	2.50	1.31	13.0	<10	
01-114	B-001-R	IgG1	(H-H-H-H)	1.26	0.14	92.0	<10	
01-115	B-001-R	IgG2a	(H-H-H-H)	1.66	0.22	71.7	<10	
01-117	B-001-R	IgG1	(H-H-H-H)	0.89	0.94	93.4	<10	
01-118	B-001-R		(H-H-H-H)	1.55	0.85	93.6	<10	

FIG. 1A

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Clone ID	Mouse ID	preliminary Isotype ID	Immunization scheme (prime-boost)	APRIL (ELISA, A ₄₅₀)	Binding	% Blocking	Receptor
				Human APRIL	Mouse APRIL	Human APRIL	Mouse APRIL
01-119	B-001-R	IgG2a	(H-H-H-H)	1.17	0.43	94.5	<10
01-120	B-001-R	IgG2a	(H-H-H-H)	1.98	0.26	74.6	<10
01-121	B-001-R	IgG2a	(H-H-H-H)	2.02	0.31	88.1	<10
01-123	B-001-R		(H-H-H-H)	0.75	0.12	11.7	<10
01-124	B-001-R	IgG1	(H-H-H-H)	1.53	0.21	94.6	<10
01-125	B-001-R	IgG2a	(H-H-H-H)	1.97	0.15	14.6	<10
01-126	B-001-R		(H-H-H-H)	1.93	0.22	14.8	<10
01-128	B-001-R		(H-H-H-H)	1.65	0.19	21.8	<10
01-133	B-001-R	IgG1	(H-H-H-H)	2.25	0.37	20.1	<10
01-135	B-001-R	IgG3	(H-H-H-H)	2.39	0.74	57.5	<10
01-136	B-001-R	IgG2b	(H-H-H-H)	2.42	0.40	18.1	15.9
01-137	B-001-R		(H-H-H-H)	2.16	0.19	12.8	<10
01-140	B-001-R		(H-H-H-H)	1.96	0.26	74.3	<10
01-143	B-001-R	IgG2b	(H-H-H-H)	2.33	0.34	<10	54.9
01-144	B-001-R	IgG2a	(H-H-H-H)	2.36	0.52	<10	12.1
01-147	B-001-R		(H-H-H-H)	1.57	0.49	74.3	<10
01-148	B-001-R	IgG1	(H-H-H-H)	2.38	0.78	94.2	<10
01-152	B-001-R	IgG1	(H-H-H-H)	2.37	0.38	92.5	<10
01-153	B-001-R		(H-H-H-H)	1.29	0.21	92.8	<10
01-154	B-001-R	IgG1	(H-H-H-H)	2.52	0.70	29.6	<10
02-009	B-002-L	IgM	(M-M-M-H-M)	3.04	0.06	96.4	19.2
02-011	B-002-L	IgG1	(M-M-M-H-M)	0.21	0.07	15.1	<10
02-016	B-002-L	IgM	(M-M-M-H-M)	0.06	0.18	18.8	26.5
02-024	B-002-L	IgM	(M-M-M-H-M)	1.64	0.06	23.1	<10
02-029	B-002-L	IgM	(M-M-M-H-M)	1.88	0.06	12.5	<10
02-033	B-002-L	IgM	(M-M-M-H-M)	2.40	0.22	25.9	29.1
02-046	B-002-L	IgM	(M-M-M-H-M)	2.80	0.09	82.0	<10
02-069	B-002-L	IgM	(M-M-M-H-M)	1.47	1.60	<10	17.1
02-075	B-002-L	IgG1	(M-M-M-H-M)	0.06	0.78	5.2	30.2
02-086	B-002-L	IgG2a	(M-M-M-H-M)	2.49	0.11	<10	26.9
02-111	B-003-O	IgG1	(H-H-H-M-H)	2.98	2.17	80.1	67.6
02-115	B-003-O	IgM	(H-H-H-M-H)	0.07	0.39	25.1	40.0

FIG. 1B

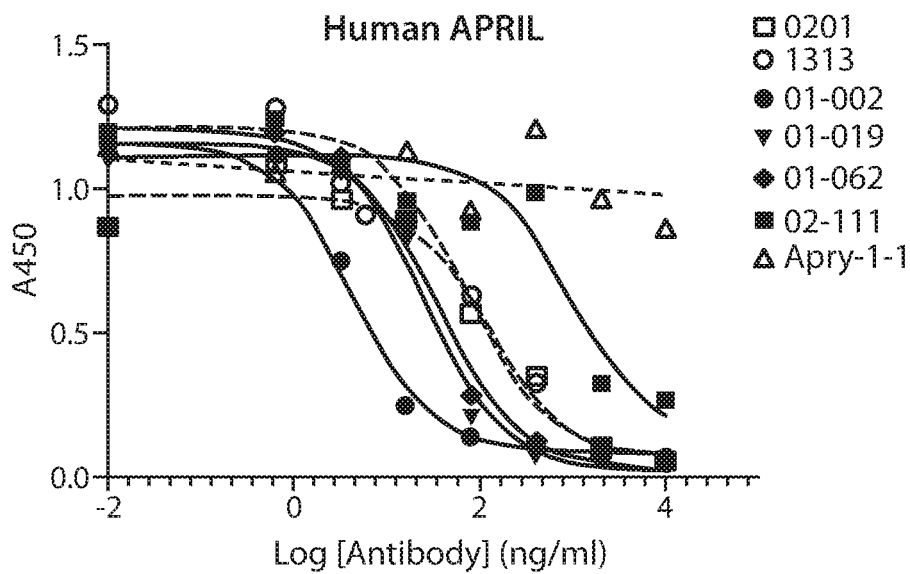


FIG. 2A

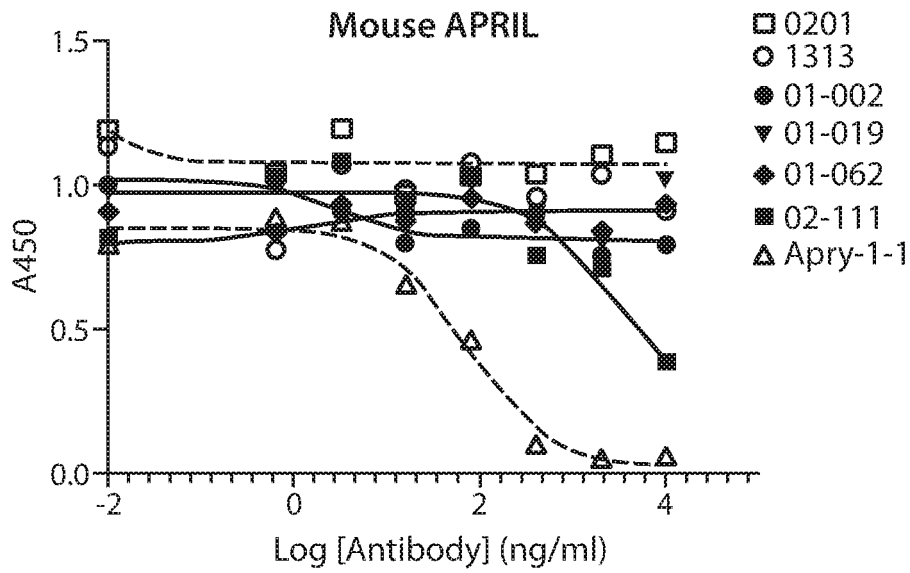


FIG. 2B

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Clone ID	Binding (approximate EC ₅₀) ng/mL		Receptor Blocking (approximate IC ₅₀) ng/mL	
	Human APRIL	Mouse APRIL	Human APRIL	Mouse APRIL
01-002	10.1	46.6	4.2	>10000
01-019	16	>10000	25.2	--
01-062	51.8	314.8	36.3	--
01-081	22	--	13	--
01-105	16	>10000	512	>10000
01-115	50	--	62	--
01-117	23.3	2203	23.4	--
01-119	31	3974	28	--
01-135	113	>10000	315	--
01-144	100	>10000	>10000	--
02-111	35	706	932	2530
0201	10.4	--	204	--
1313	15.9	--	69.5	--
Apry-1-1	--	70.5	--	15.1

FIG. 3

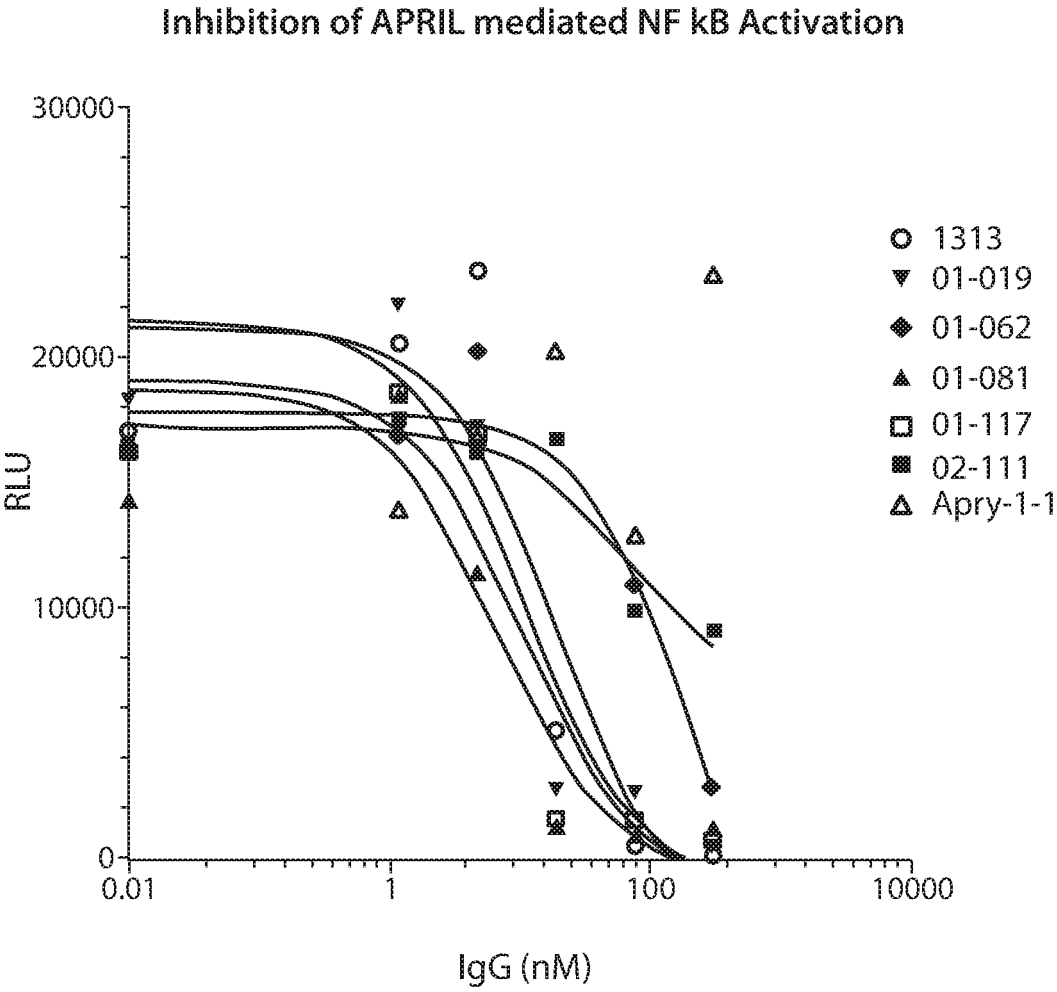


FIG. 4

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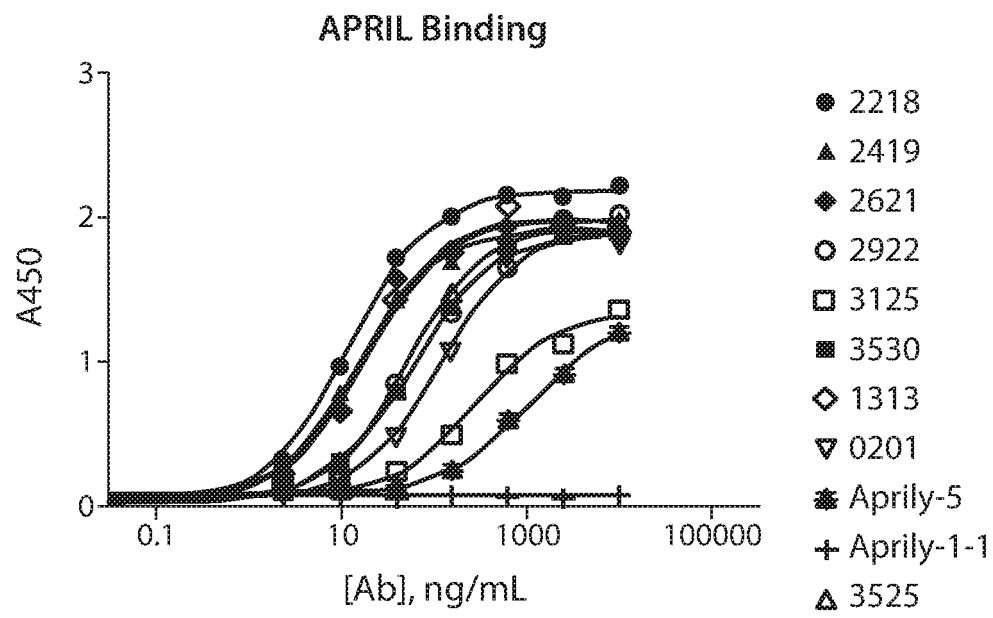


FIG. 5

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Ab	EC ₅₀ (ng/mL)	EC ₅₀ (nM)	R ²
2218	12.64	0.085	1.00
2419	16.62	0.112	1.00
2621	14.31	0.097	0.99
2922	71.33	0.482	0.99
3125	281.5	1.902	0.99
3530	58.05	0.392	1.00
3525	53.45	0.361	1.00
1313	18.24	0.123	0.99
0201	118.2	0.799	0.99
Aprily-5	968.9	6.547	0.99
Apry-1-1	--	--	0.39

FIG. 6

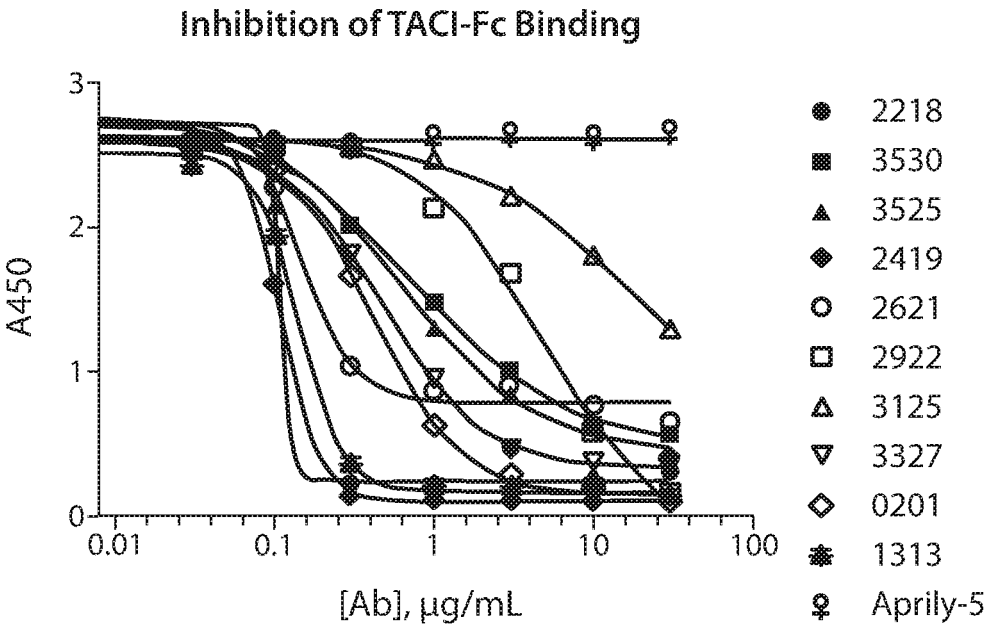


FIG. 7

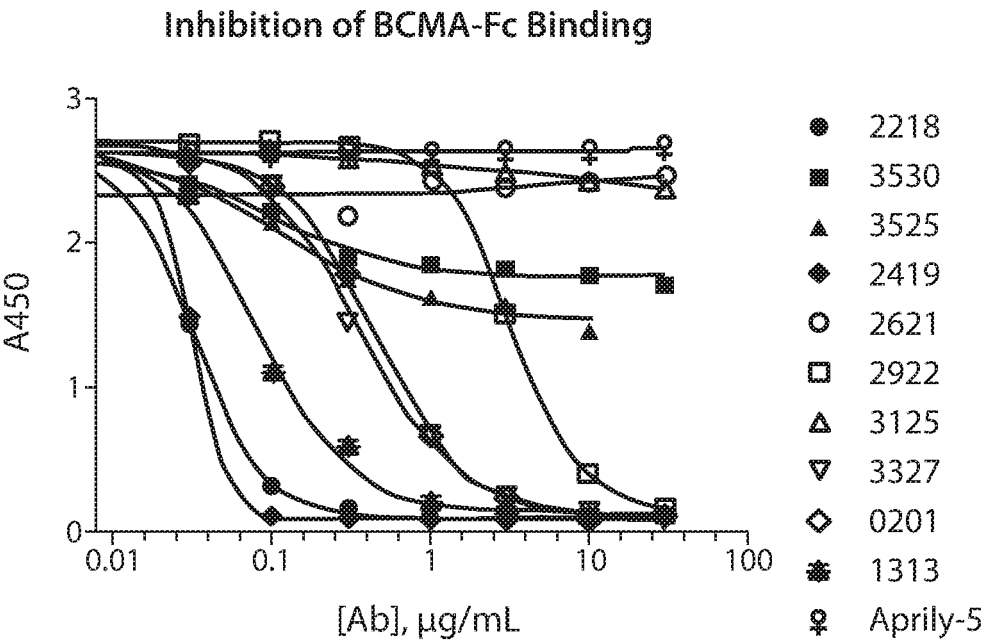


FIG. 8

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Ab	TACI-Fc			BCMA-Fc		
	IC ₅₀ (nM)	R ²	% Inhibition	IC ₅₀ (nM)	R ²	% Inhibition
2218	0.74	1.00	91	0.22	1.00	100
3530	4.95	1.00	81	0.68	0.99	35
3525	4.05	1.00	86	0.85	0.99	48
2419	0.74	1.00	99	0.22	1.00	100
2621	1.00	0.99	79	--	0.10	0
2922	31.64	1.00	97	21.96	1.00	97
3125	112.97	1.00	52	--	0.99	<10
3327	3.16	1.00	89	2.35	1.00	99
0201	2.85	1.00	99	3.14	1.00	99
1313	0.95	1.00	96	0.55	0.99	99
Aprily-5	NA	0.54	0	--	0.39	0

FIG. 9

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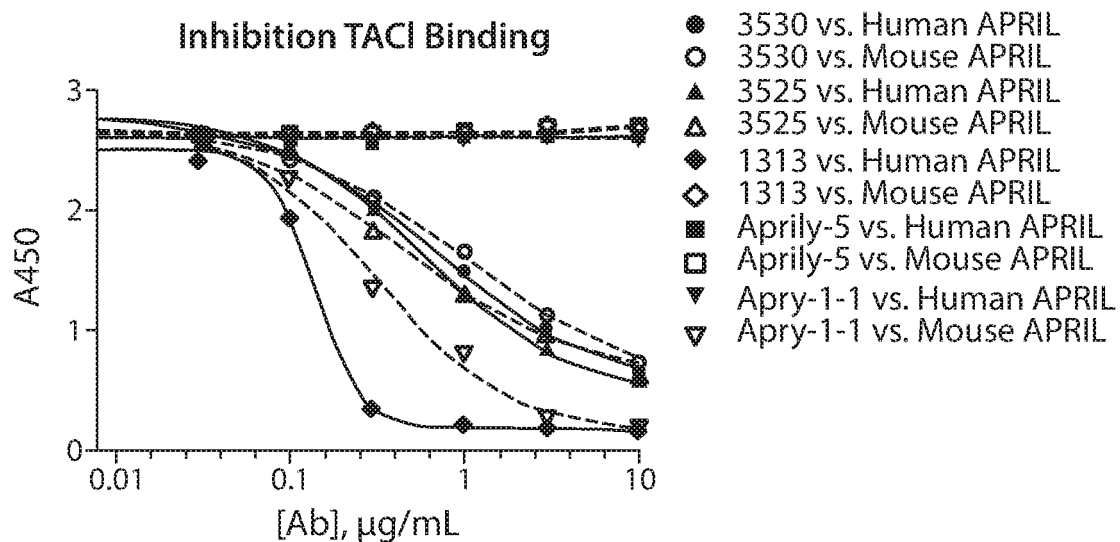


FIG. 10A

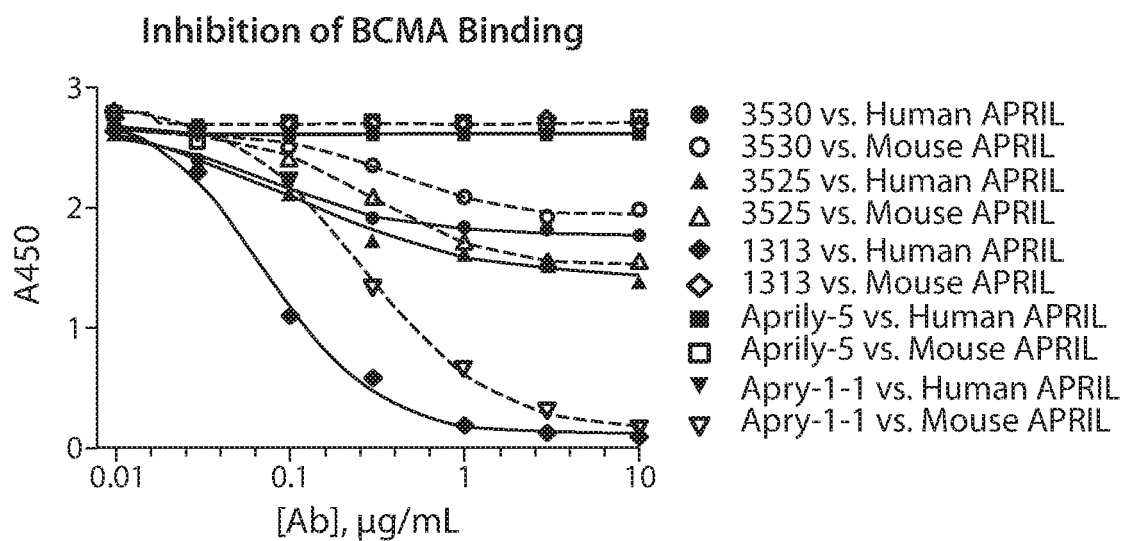


FIG. 10B

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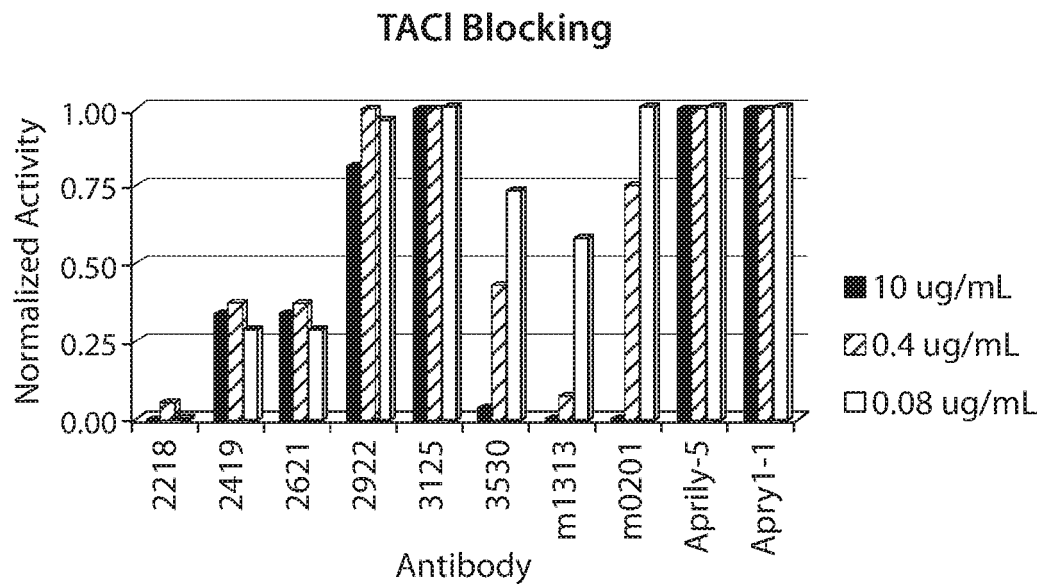


FIG. 11A

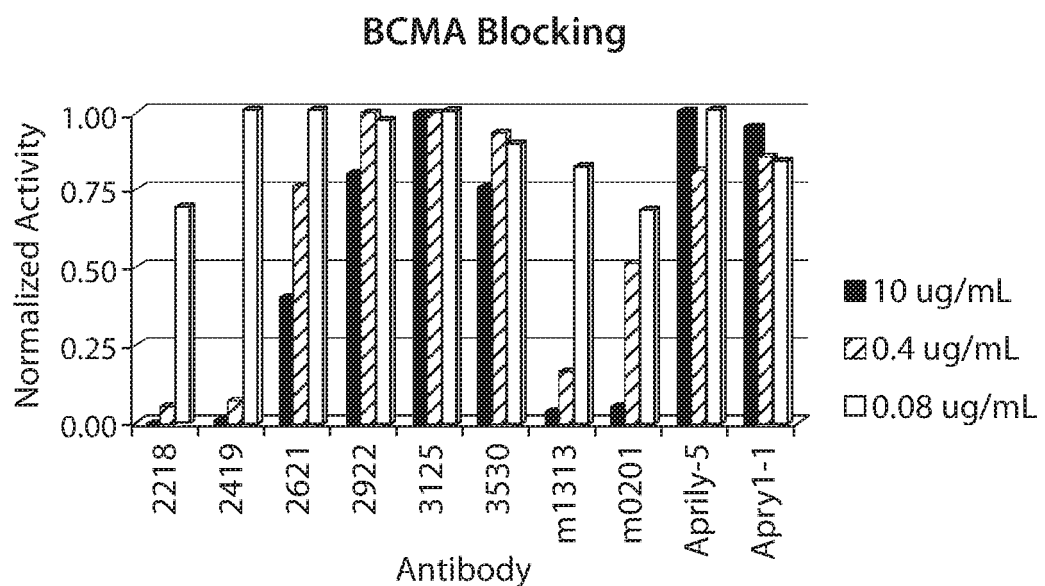


FIG. 11B

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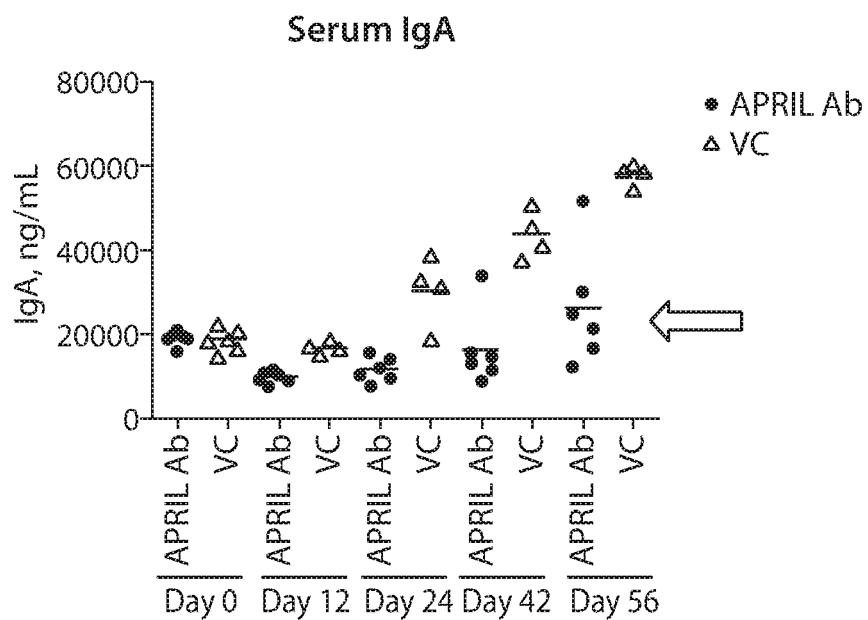


FIG. 12A

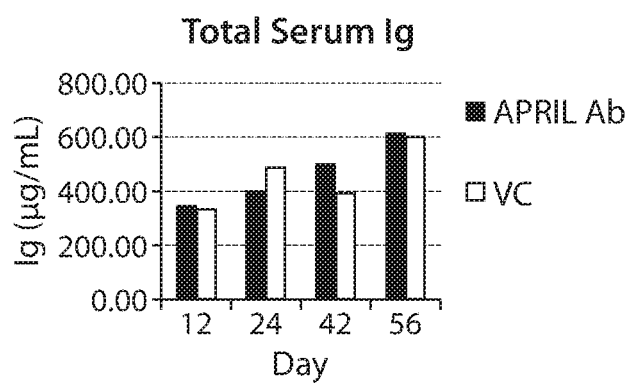


FIG. 12B

Human	1	MPASSPFLAPKPPGNMGPPVREPALSVALWLSWGAALGAVACAMALLT	50
		: 	
Mouse	1	MPASS-----PGHMGGSVREPALSVALWLSWGAVLGAVTCAVALLI	41
Human	51	QQTELQSLRREVSRRLQGTGGPSQNGEGYPWQSLPEQSSDALEAWENGERS	100
		. .: :	
Mouse	42	QQTELQSLRREVSRRLQRSRGGPSQKQGERPWQSLWEQSPDVLEAWKDGAKS	91
Human	101	RKRRRAVLTKQKKQHSHVLHLPINATSKDDSDVTEVMWQPALRRRGRGLQA	150
		: .: .: .: .: .:	
Mouse	92	RRRRRAVLTKQHKHKKHSHVLHLPVNITSKADSDVTEVMWQPVLRRRGRGLEA	141
Human	151	QGYGVRIQDAGVLLYSQVLFQDVFTFMGQVVSREGQGRQETLFR CIRSM	200
			
Mouse	142	QGDIVRVWDTGIYLLYSQVLFHDVFTFMGQVVSREGQGRRET LFR CIRSM	191
Human	201	PSHPDRAYNSCYSAGVFHLHQGDILSVIIPRARA KNLNSPHGTFELGFVKL	250
			
Mouse	192	PSDPPDRAYNSCYSAGVFHLHQGDII TVKI PRANA KLSLSPHGTFELGFVKL	241

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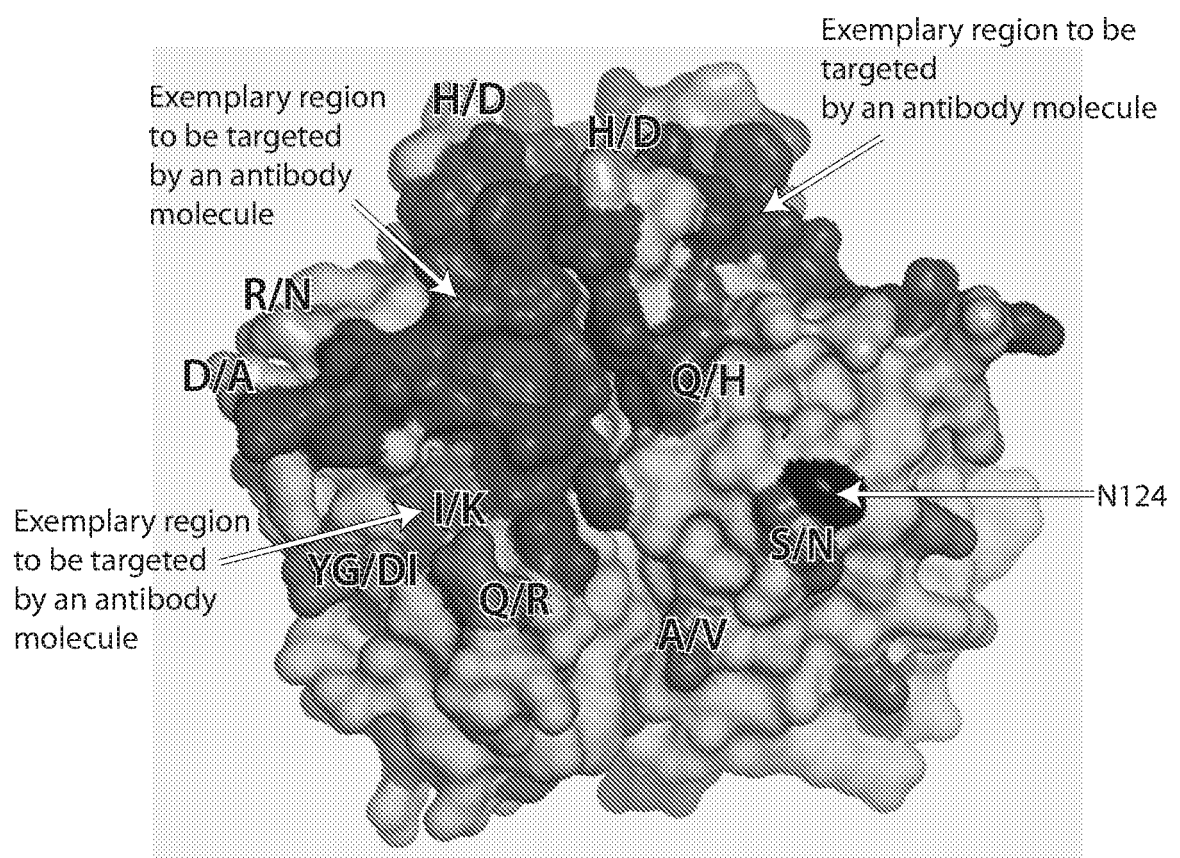


FIG. 14

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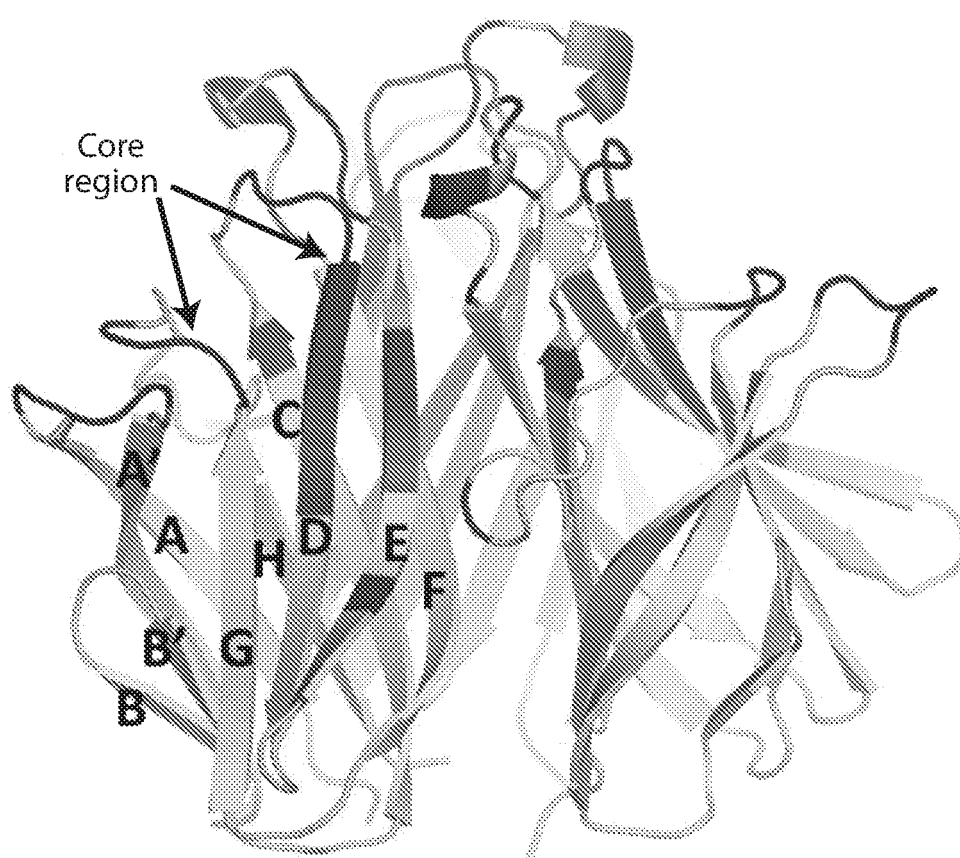


FIG. 15

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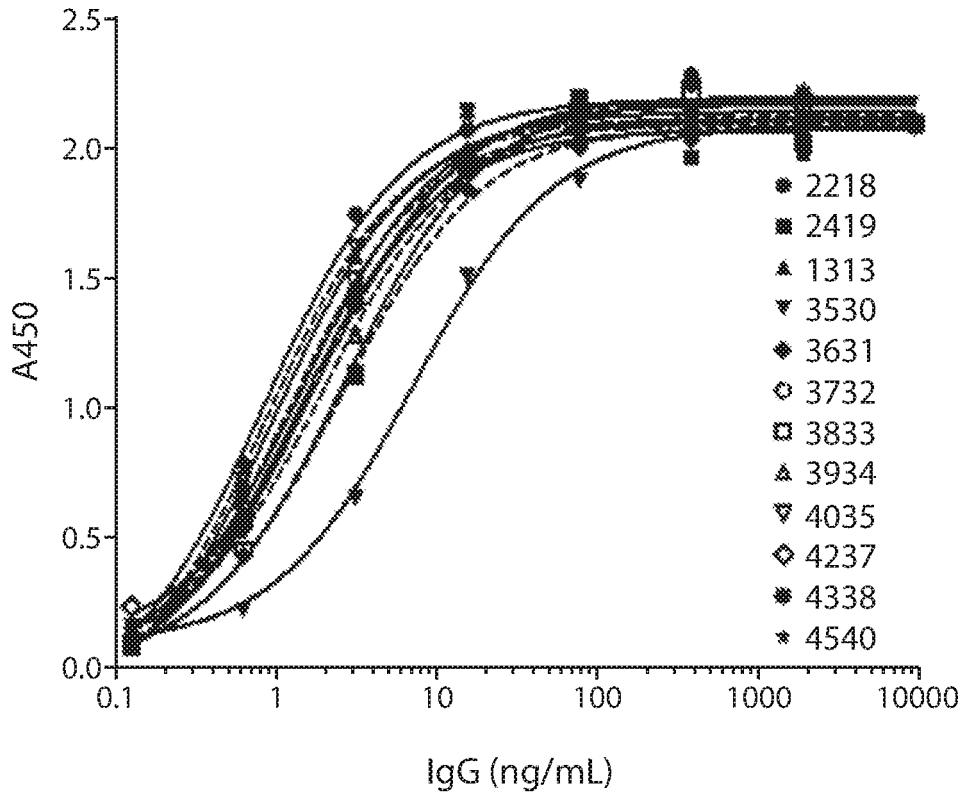


FIG. 16

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Antibody ID	IC ₅₀ (pM)	R ²
2218	5.0	0.994
2419	8.7	0.995
1313	6.1	0.986
3530	48.9	0.997
3631	16.6	0.998
3732	7.2	0.997
3833	17.5	0.995
3934	10.1	0.989
4035	5.1	0.994
4237	12.6	0.996
4338	9.2	0.993
4540	12.9	0.997

FIG. 17

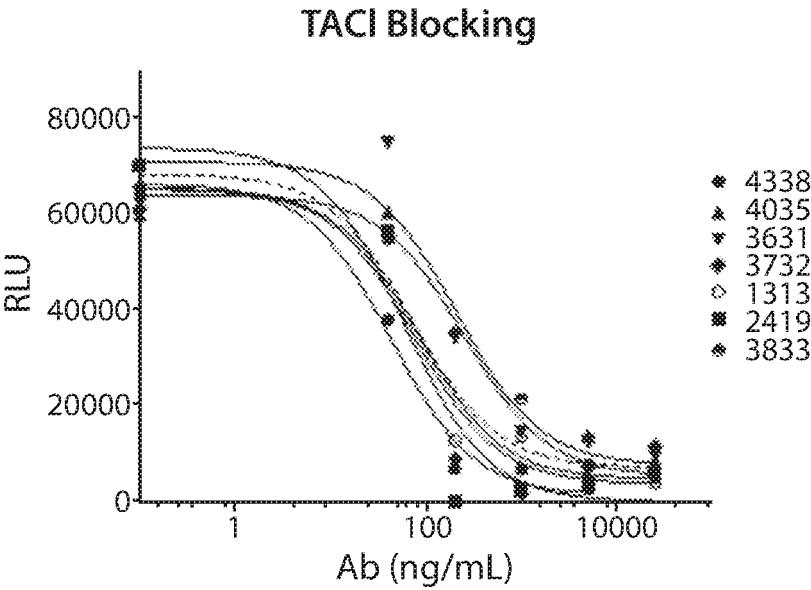


FIG. 18A

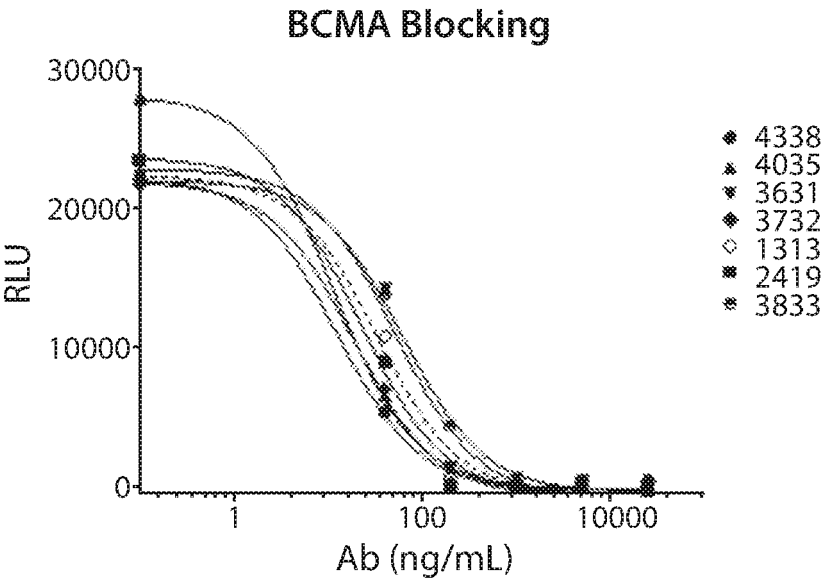


FIG. 18B

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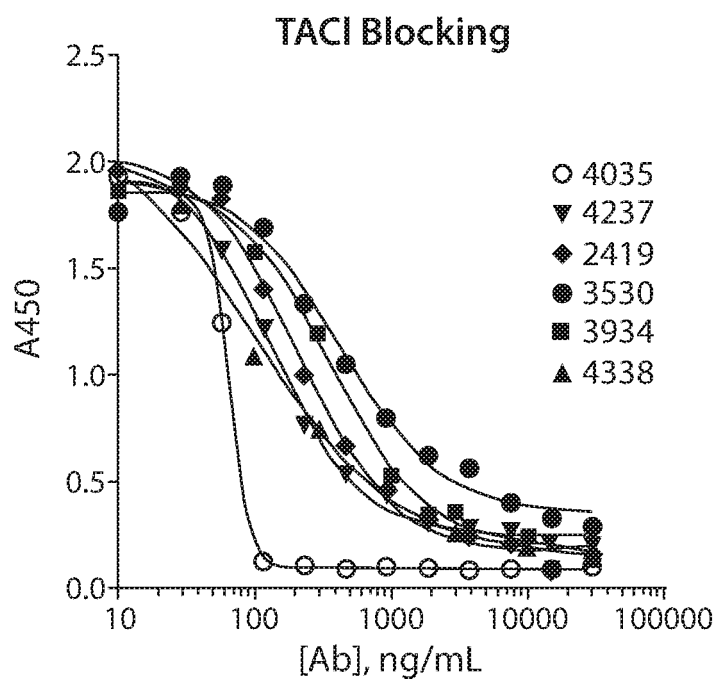


FIG. 19A

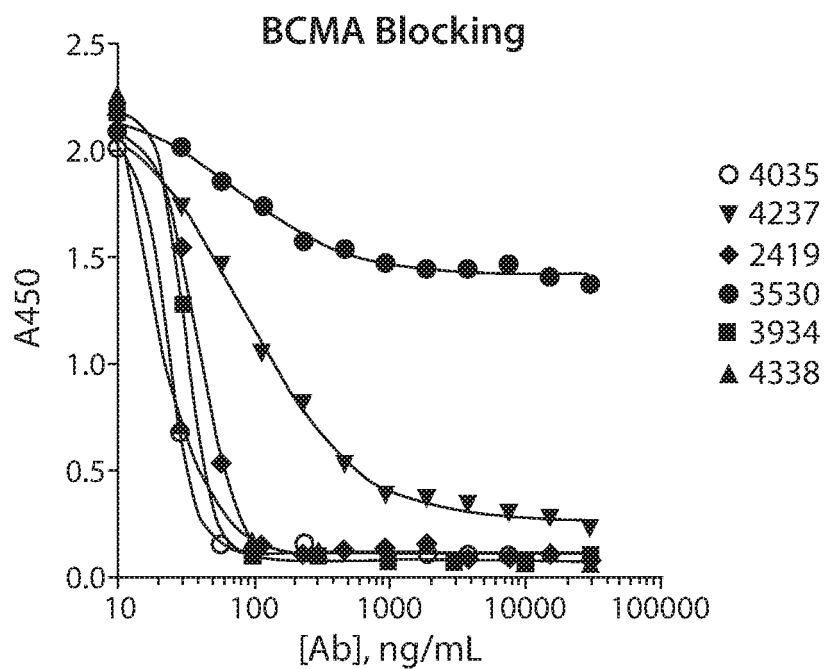


FIG. 19B

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TACI-Fc				BCMA-Fc		
Ab	IC ₅₀ (nM)	R ²	% Inhibition	IC ₅₀ (nM)	R ²	% Inhibition
3833	2.25	1.00	72	2.70	1.00	96
4540	1.01	0.93	65	0.66	1.00	98
4035	0.44	1.00	100	0.16	1.00	99
4237	0.90	1.00	95	0.56	1.00	93
2419	1.44	1.00	97	0.27	1.00	100
2218	0.98	0.89	40	0.31	1.00	99
3530	2.90	0.99	89	0.48	0.99	37
3631	0.27	0.98	63	0.48	1.00	100
3732	--	--	--	0.22	1.00	100
3934	2.43	0.99	96	0.21	1.00	98
4338	0.71	0.99	97	0.07	1.00	99
1313	1.55	0.90	69	1.29	1.00	98

FIG. 20

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Inhibition of BCMA binding (Human APRIL)

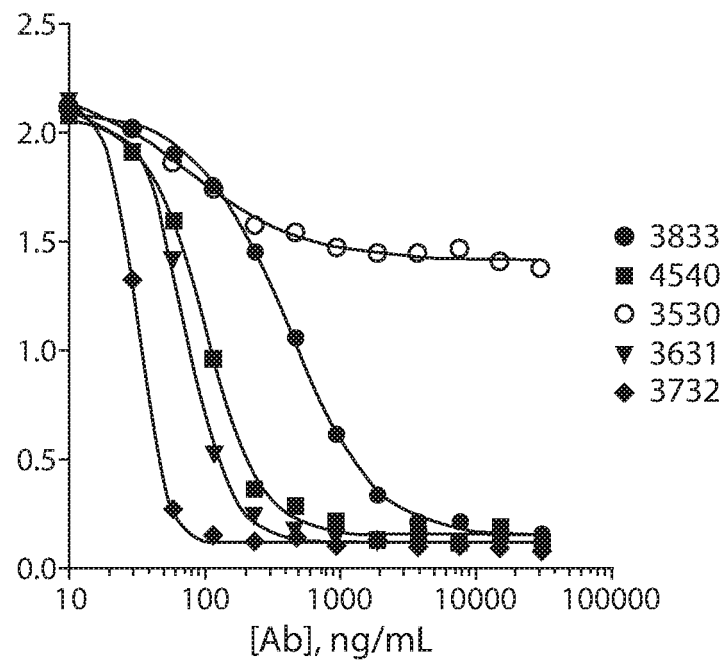


FIG. 21A

Inhibition of BCMA binding (Mouse APRIL)

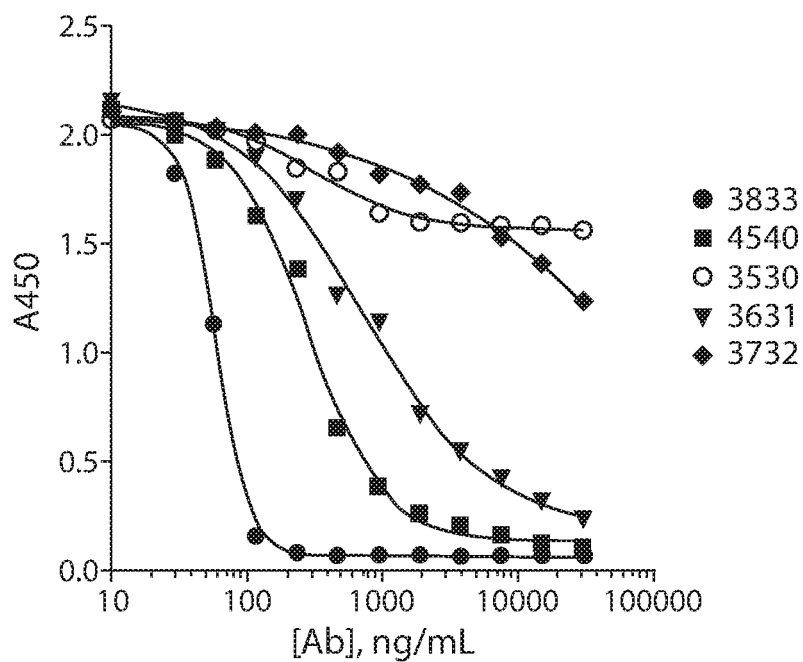


FIG. 21B

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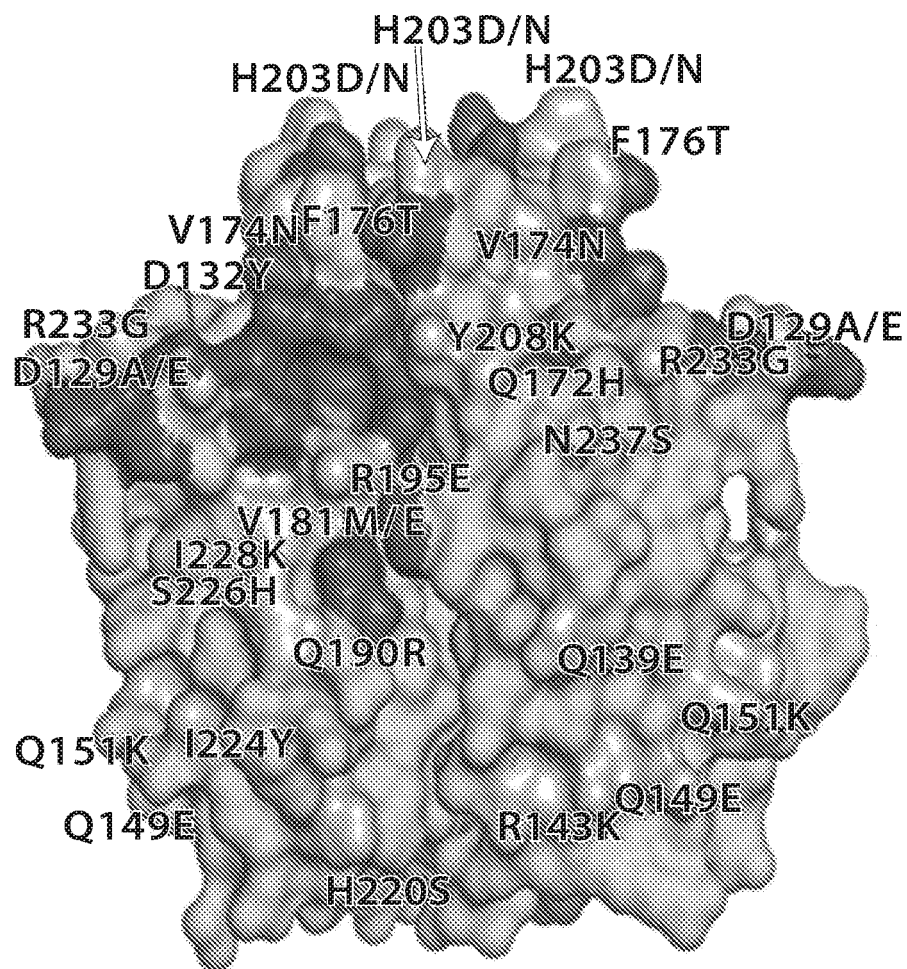


FIG. 22

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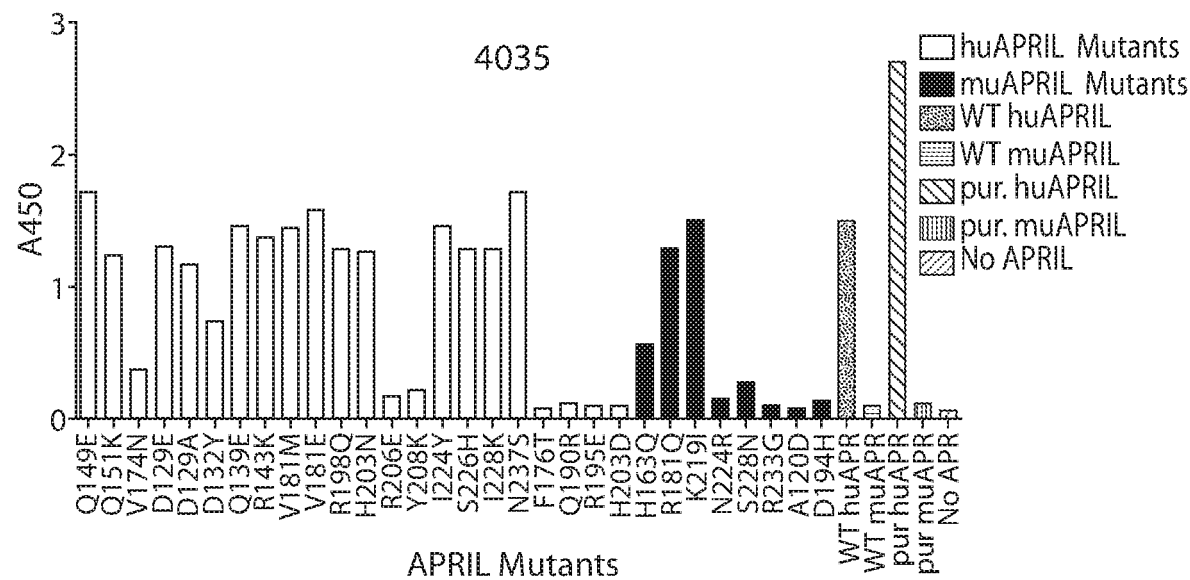


FIG. 23A

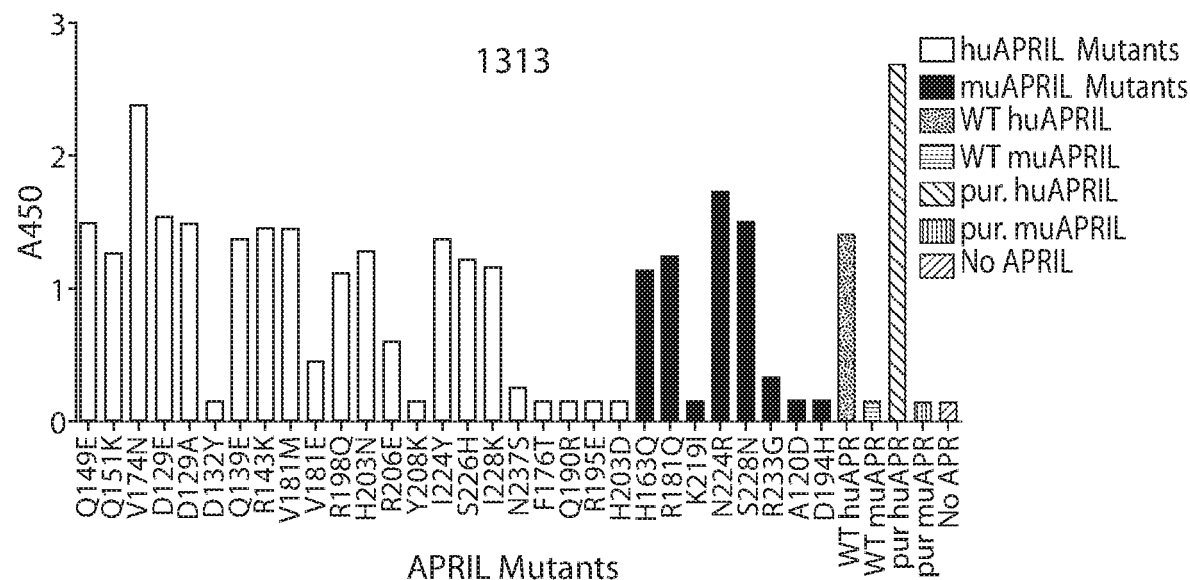


FIG. 23B

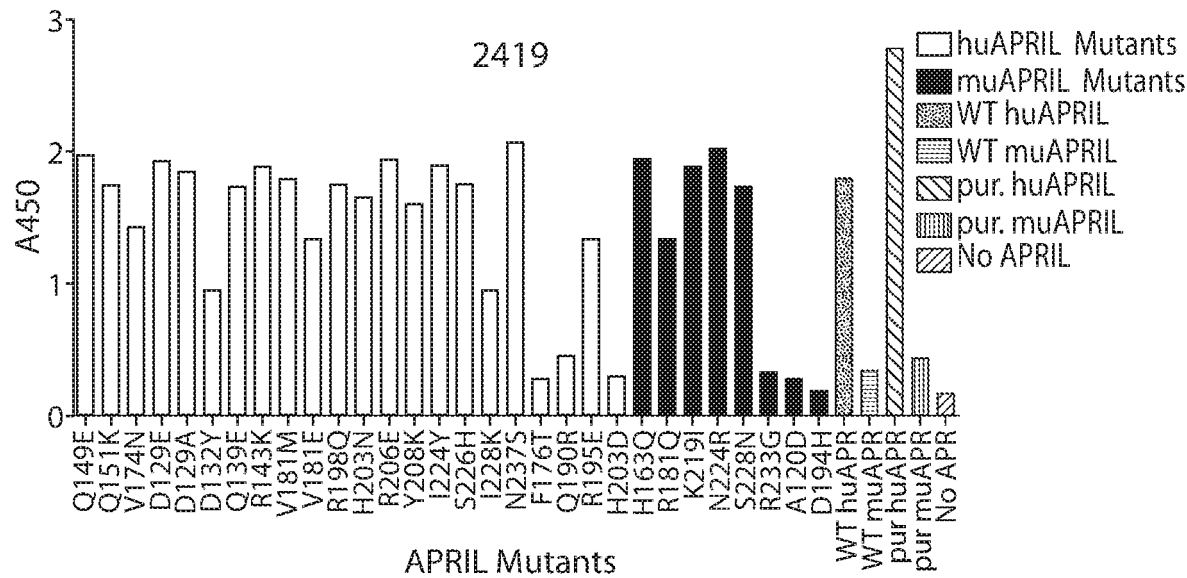


FIG. 24A

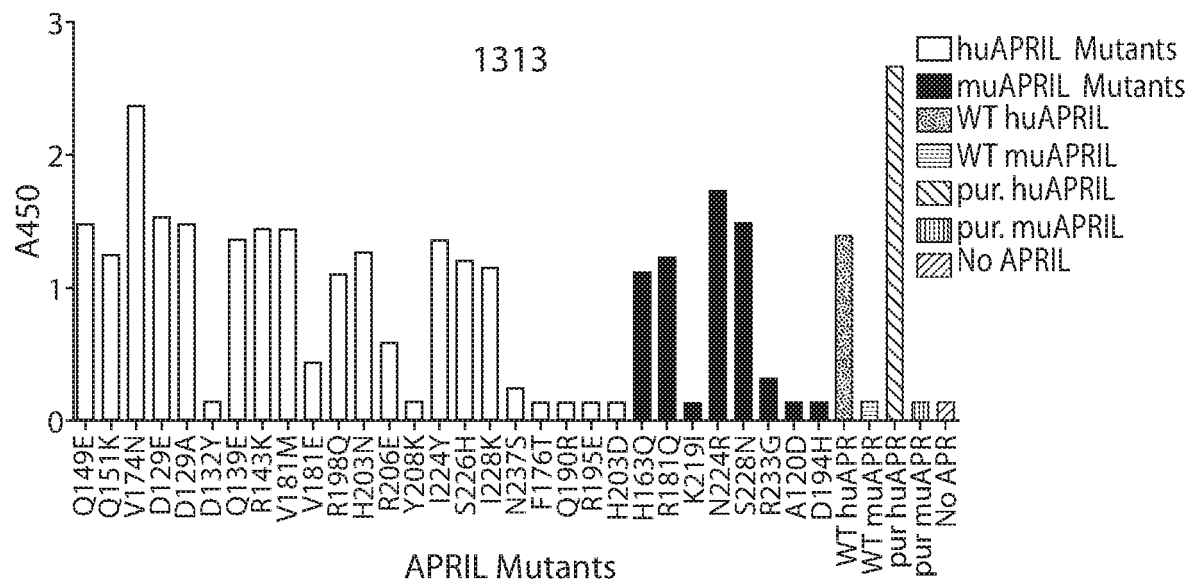


FIG. 24B

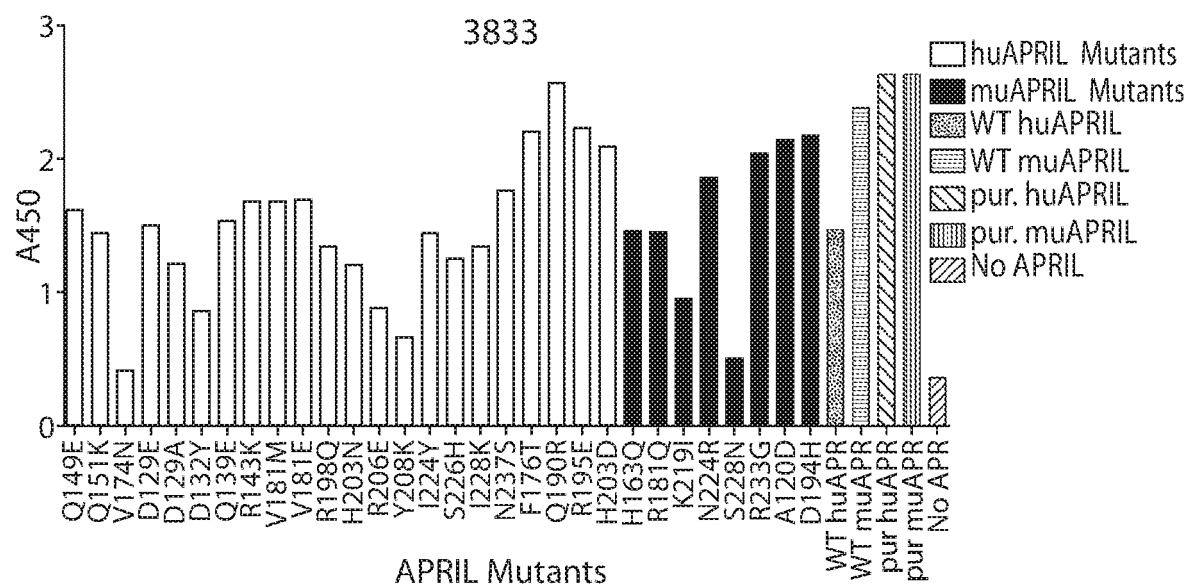


FIG. 25A

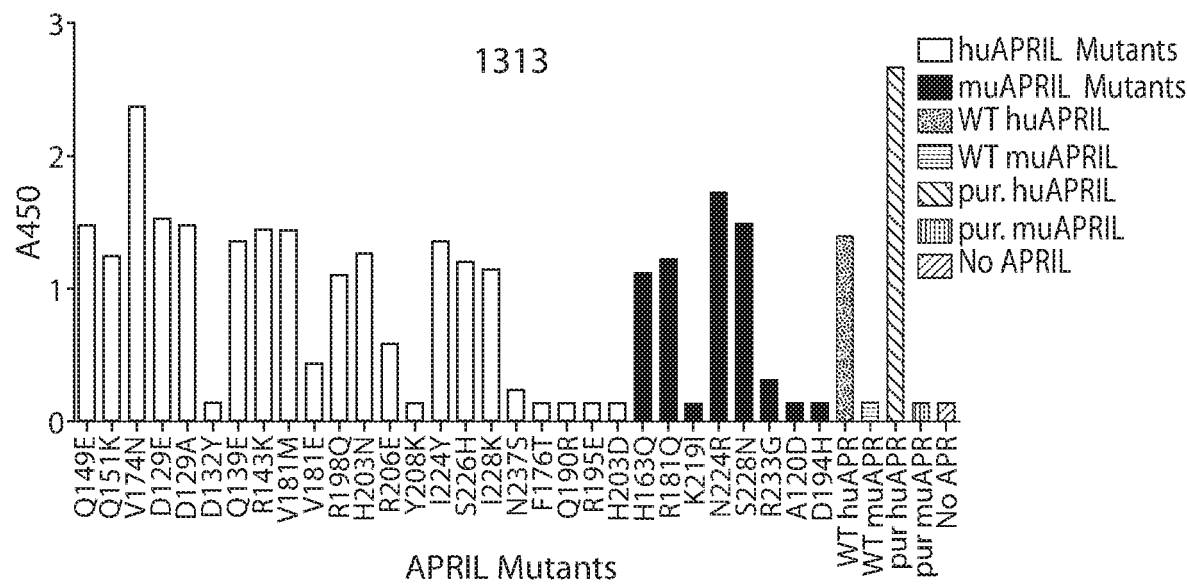


FIG. 25B

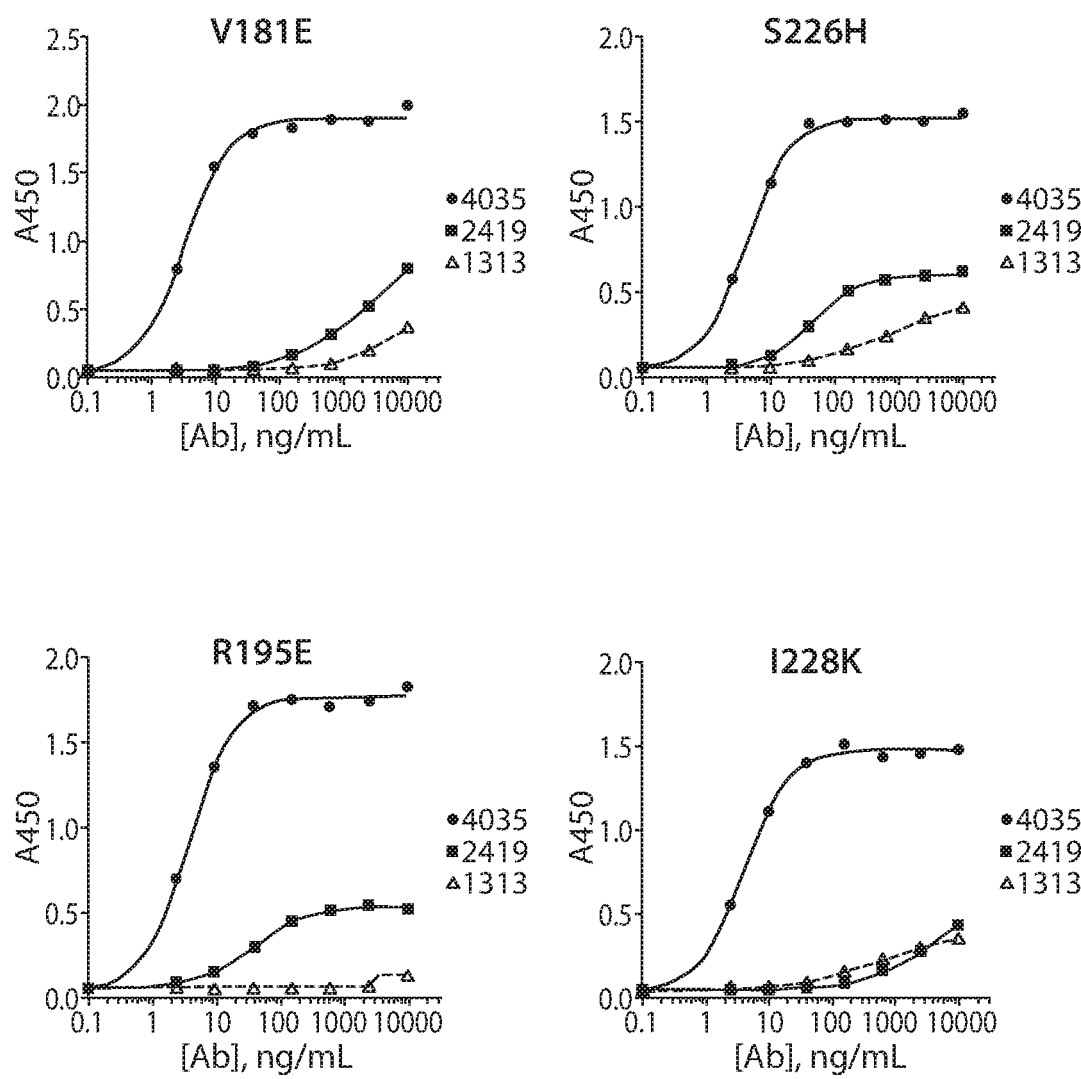


FIG. 26

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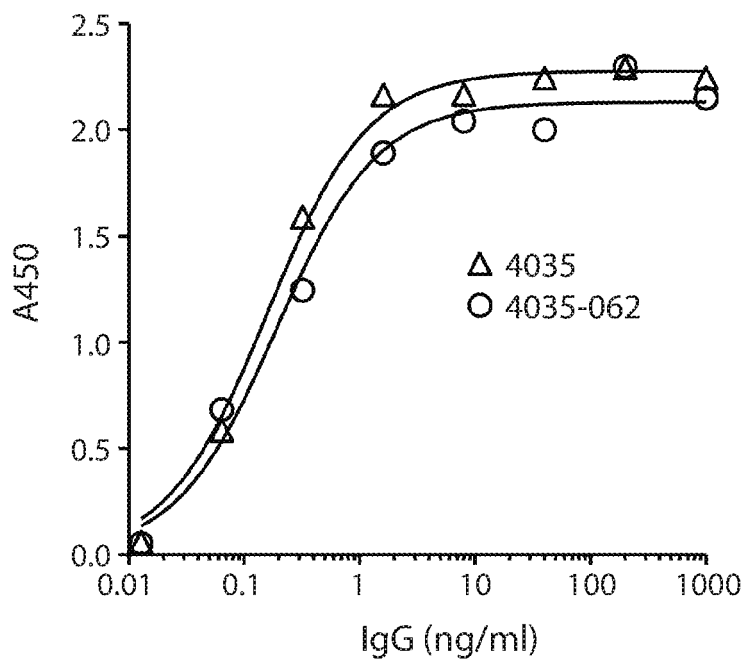


FIG. 27A

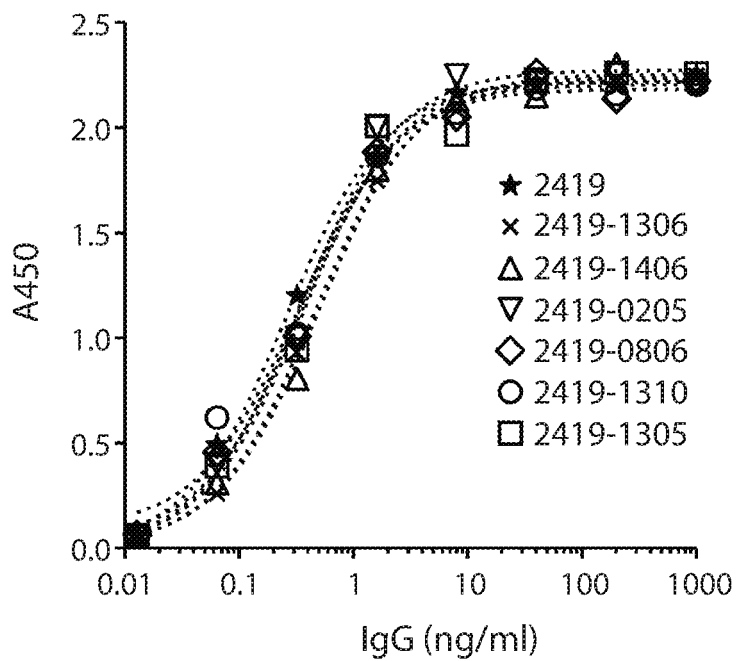


FIG. 27B

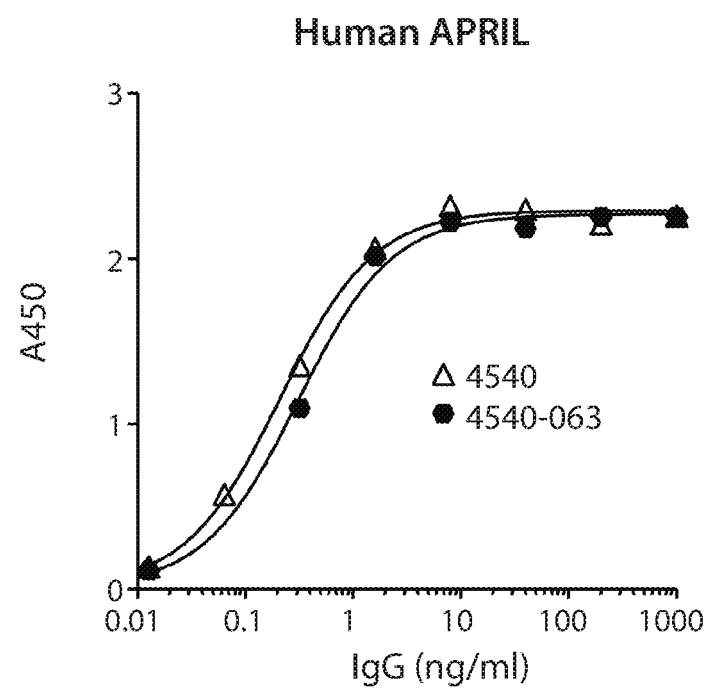


FIG. 28A

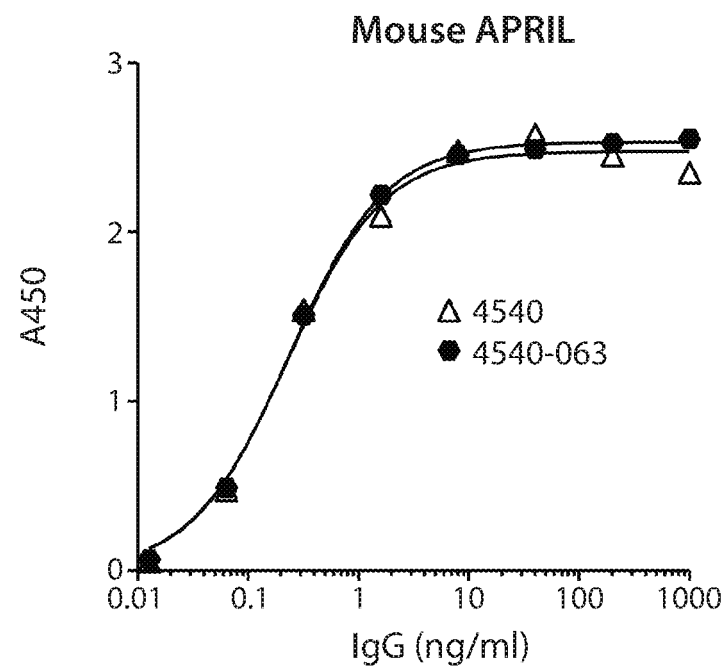


FIG. 28B

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Antibody ID	EC ₅₀ (pM)
4035	1.06
4035-062	1.28
2419	1.76
2419-1306	3.00
2419-1406	3.34
2419-0205	2.26
2419-0806	2.31
2419-1310	2.19
2419-1305	2.41

FIG. 29A

Antibody ID	APRIL Binding EC ₅₀ (pM)	
	Human APRIL	Mouse APRIL
4504	1.39	1.51
4504-063	2.06	1.56

FIG. 29B

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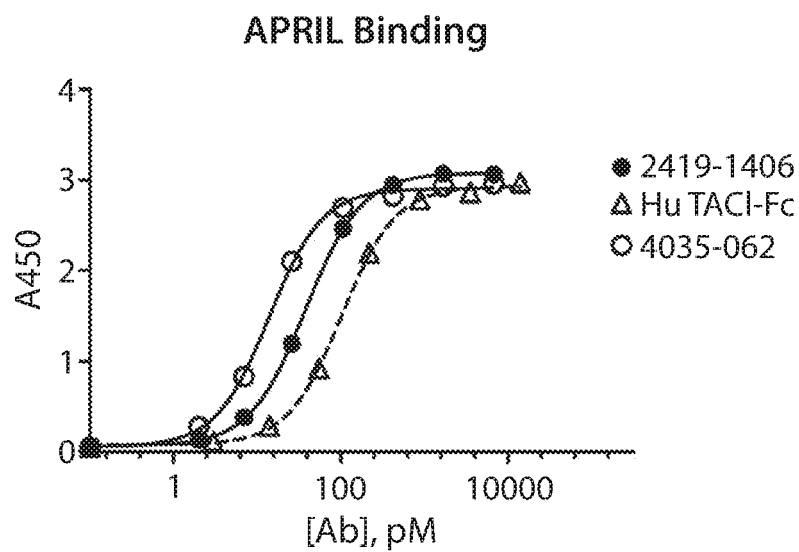


FIG. 29C

Antibody ID	EC ₅₀ (pM)
2419-1406	38.4
4035-062	13.5
Hu TACI-Fc	102.6

FIG. 29D

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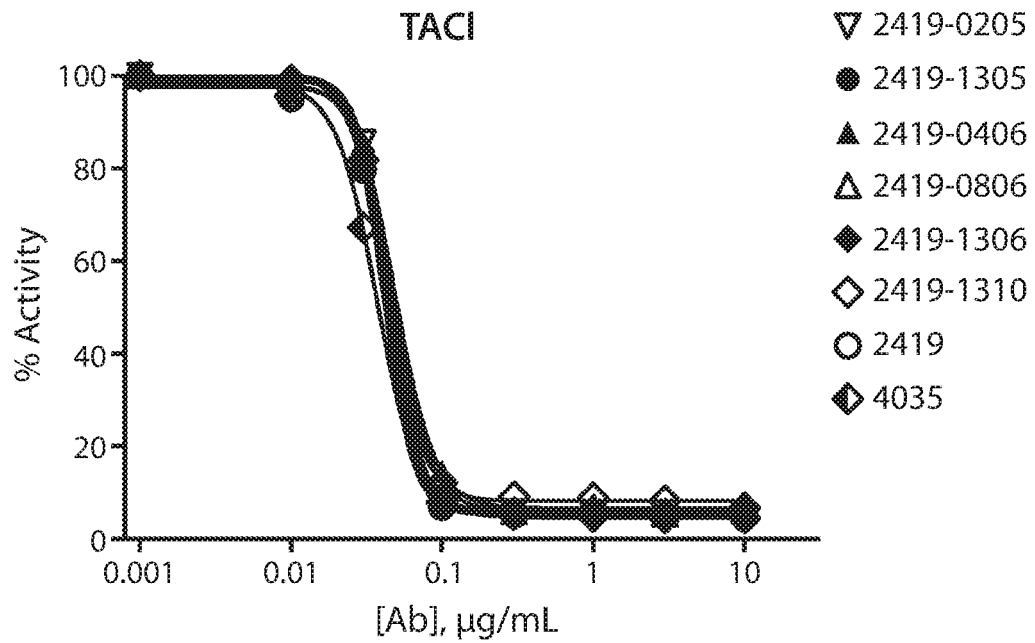


FIG. 30A

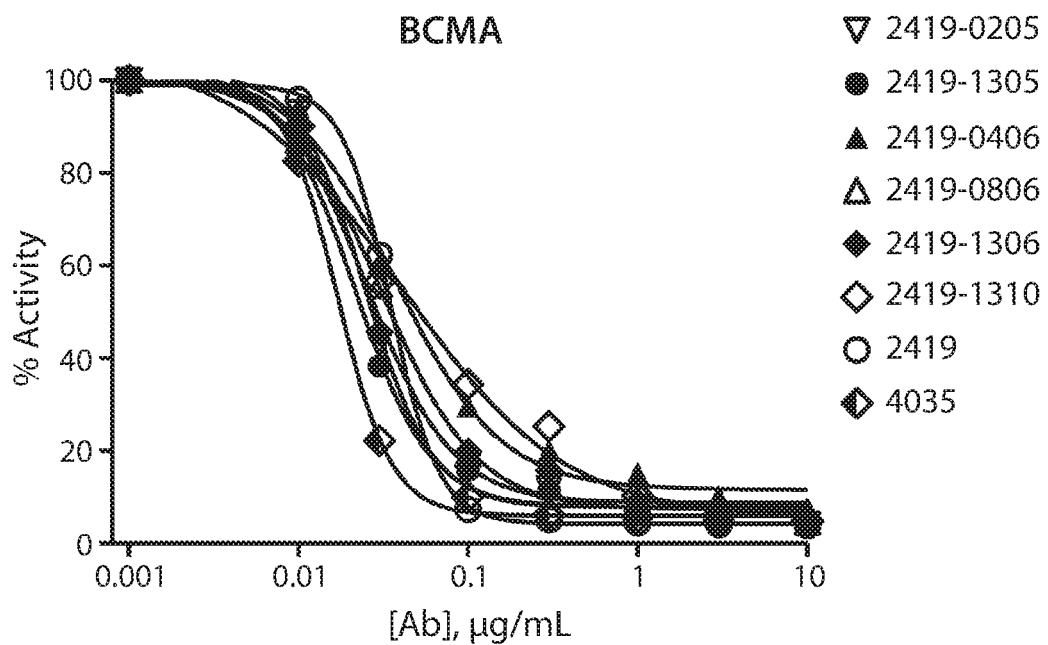


FIG. 30B

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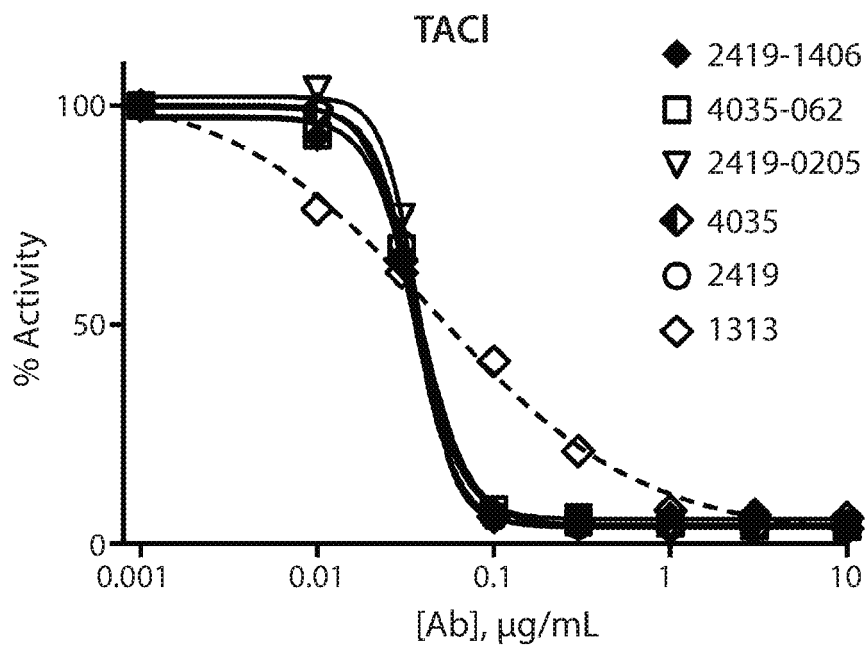


FIG. 31A

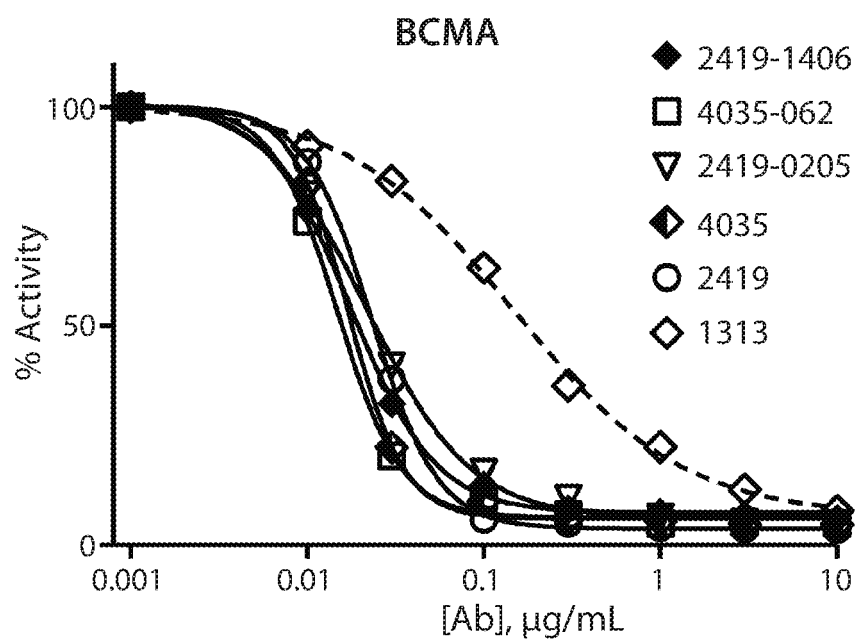


FIG. 31B

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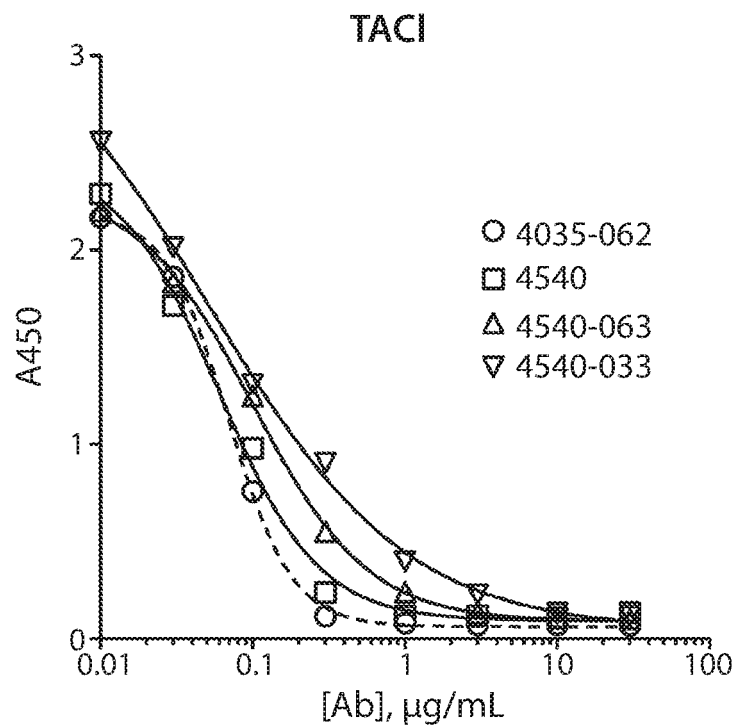


FIG. 32A

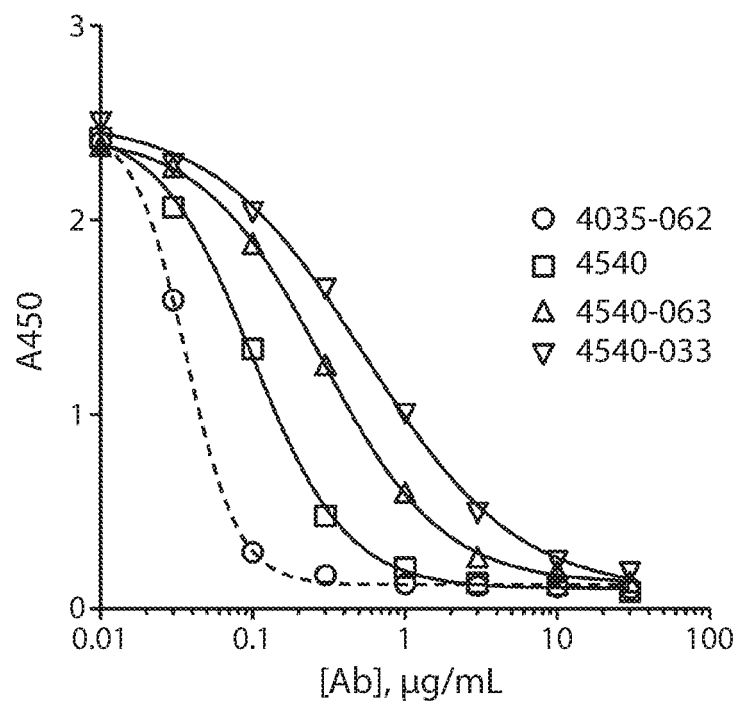


FIG. 32B

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Antibody ID	TACI		BCMA	
	IC ₅₀ (nM)	Relative Activity	IC ₅₀ (nM)	Relative Activity
2419-0205	0.31	1.12	0.17	0.71
2419-0406	0.33	1.20	0.25	1.05
2419-0806	0.32	1.17	0.21	0.89
2419-1305	0.29	1.06	0.15	0.62
2419-1306	0.28	1.03	0.17	0.72
2419-1310	0.30	1.09	0.27	1.14
2419-1406	0.24	0.88	0.11	0.47
2419	0.28	1.00	0.24	1.00
4035	0.24	0.85	0.12	0.49
4035-062	0.26	0.93	0.10	0.41
4540	0.40	1.45	0.67	2.85
4540-033	0.35	1.26	3.68	15.57
4540-063	0.67	2.43	1.92	8.11
1313	0.33	1.20	0.97	4.10

FIG. 33

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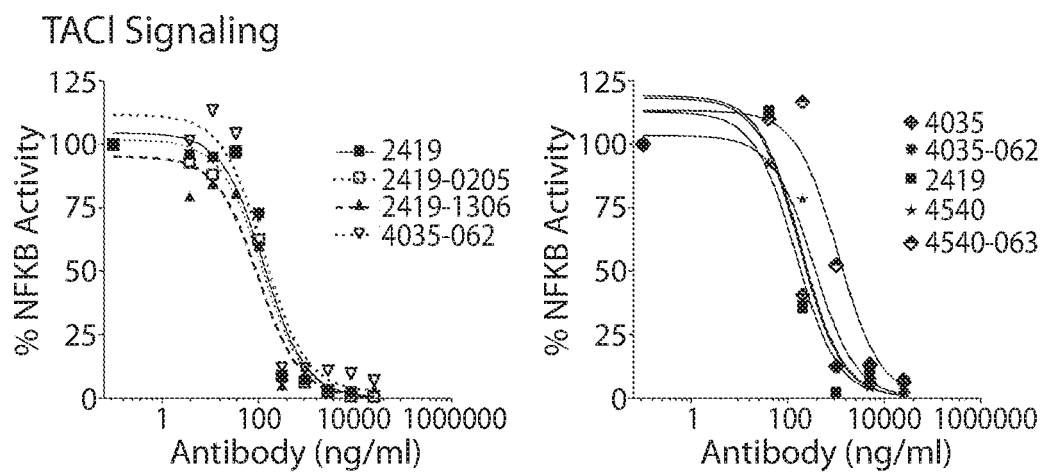


FIG. 34A

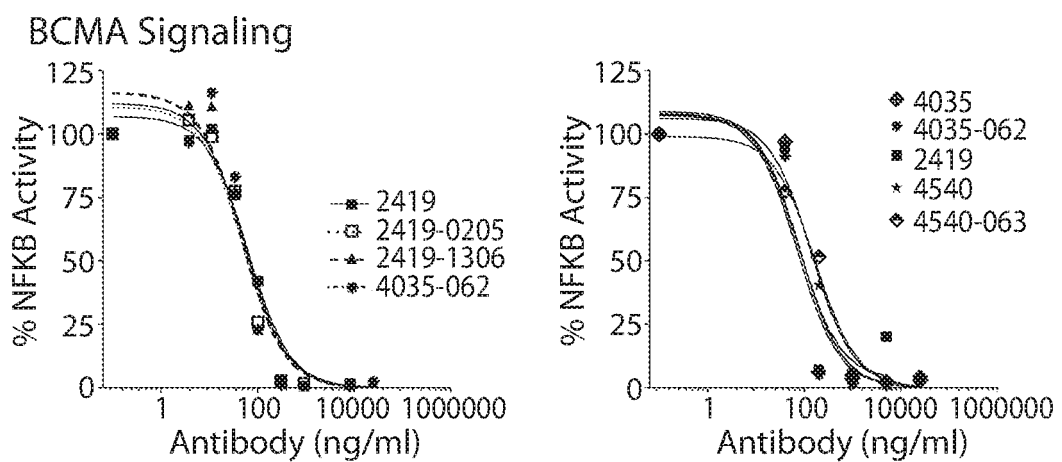
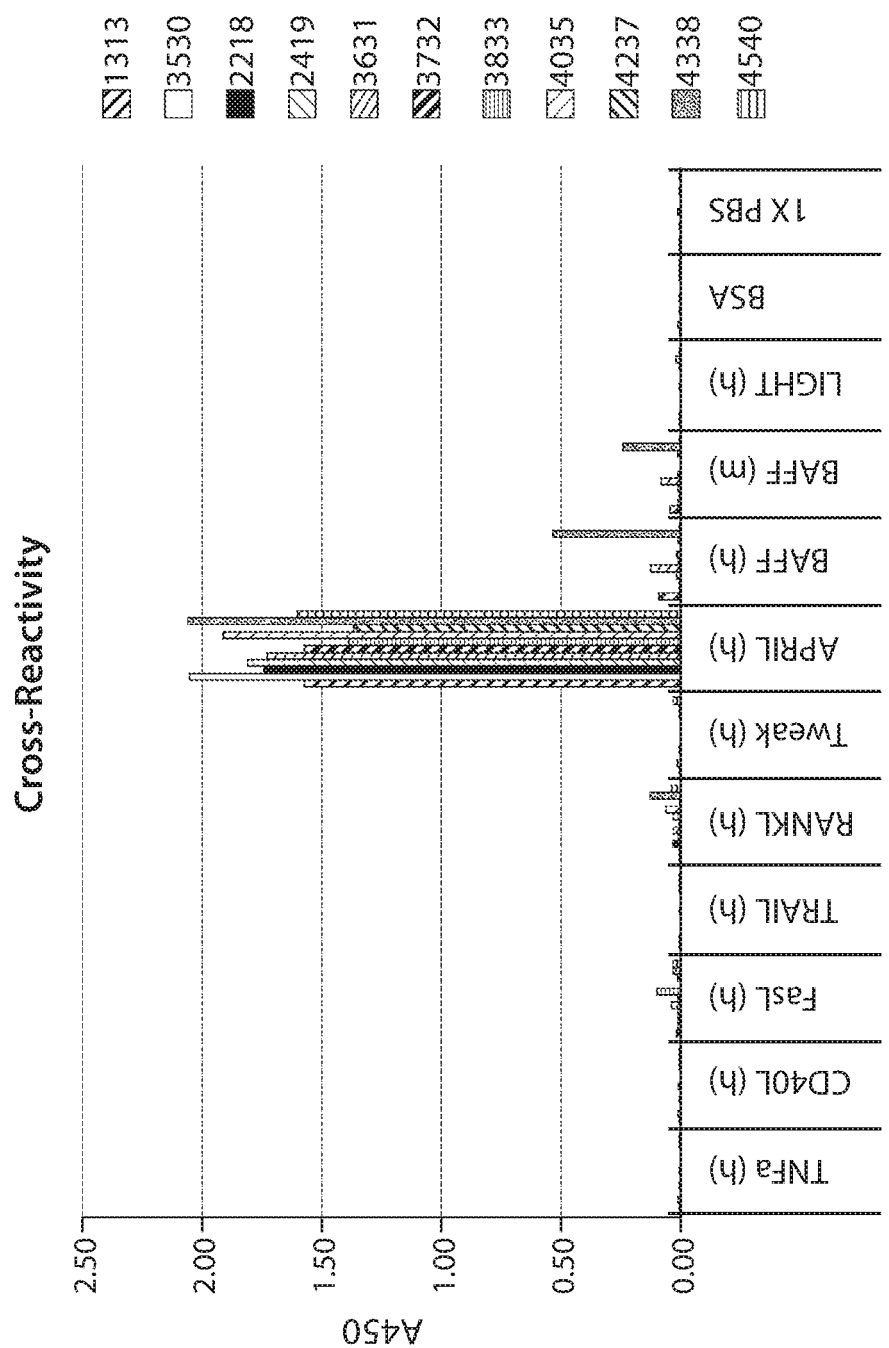


FIG. 34B

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Antibody ID	~IC ₅₀ (nM)	
	TACI	BCMA
2419	0.87	0.42
2419-0205	0.81	0.32
2419-1306	0.66	0.30
4035	1.07	0.43
4035-062	1.02	0.38
4540	2.25	0.81
4540-063	7.19	1.04
Negative Ab Control	--	--

FIG. 35



TNF Related Cytokine

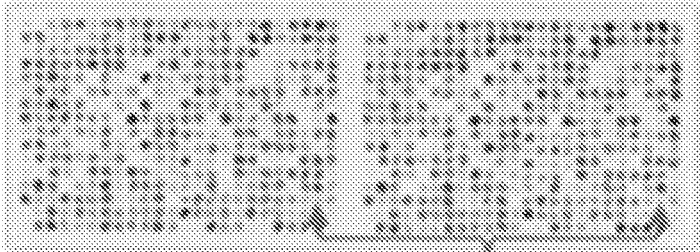


FIG. 37A

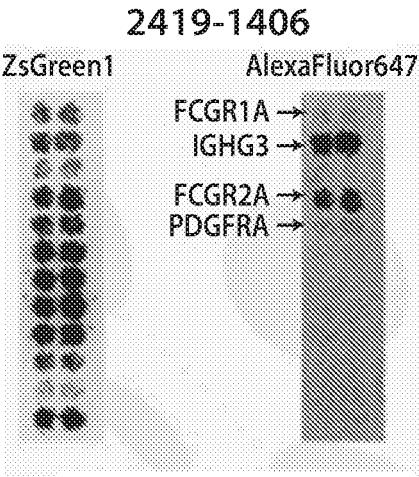


FIG. 37B

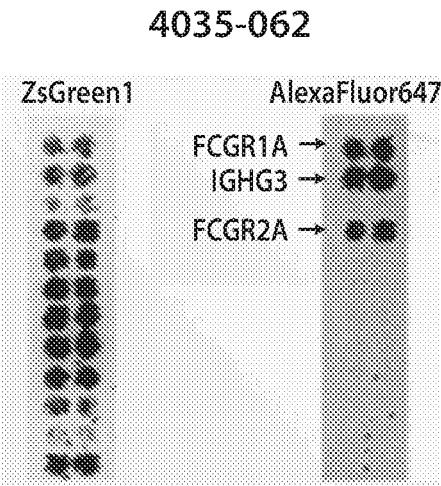


FIG. 37C

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APRIL TRIMER

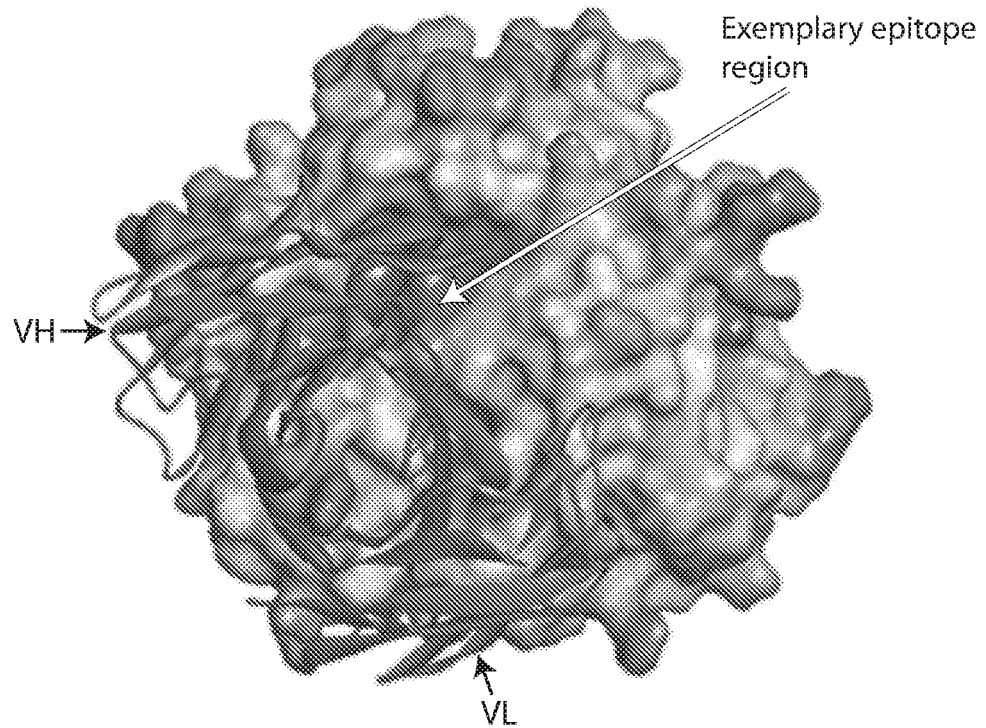


FIG. 38A

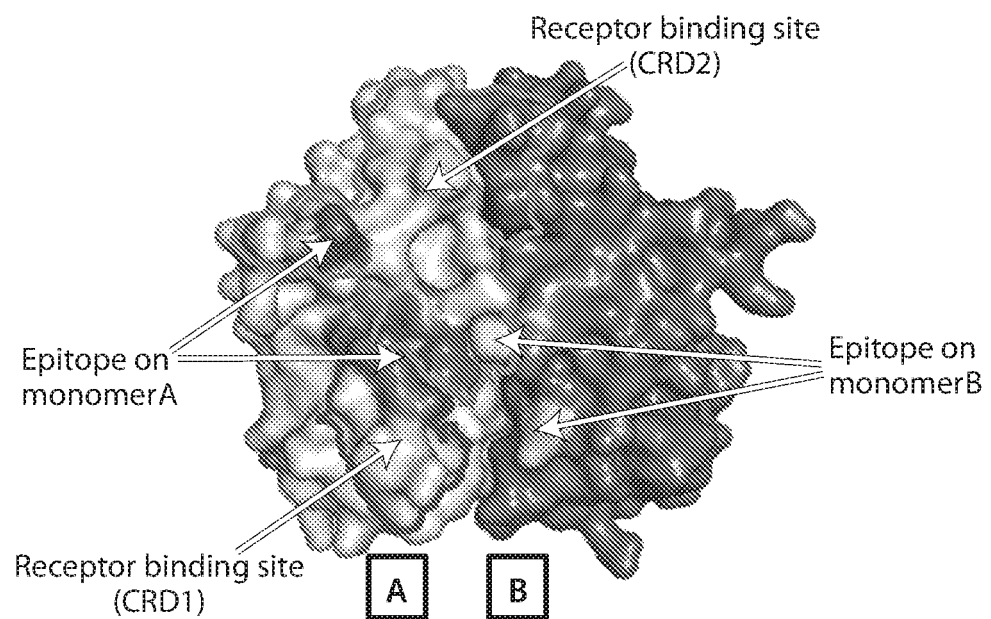


FIG. 38B

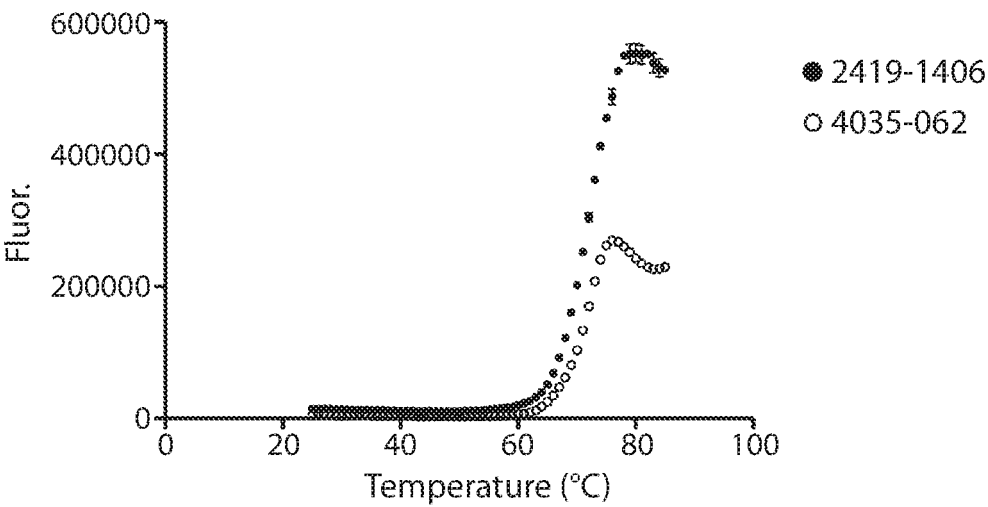


FIG. 39A

Antibody ID	Tm (°C)
4035-062	71.2
2419-1406	73.7

FIG. 39B

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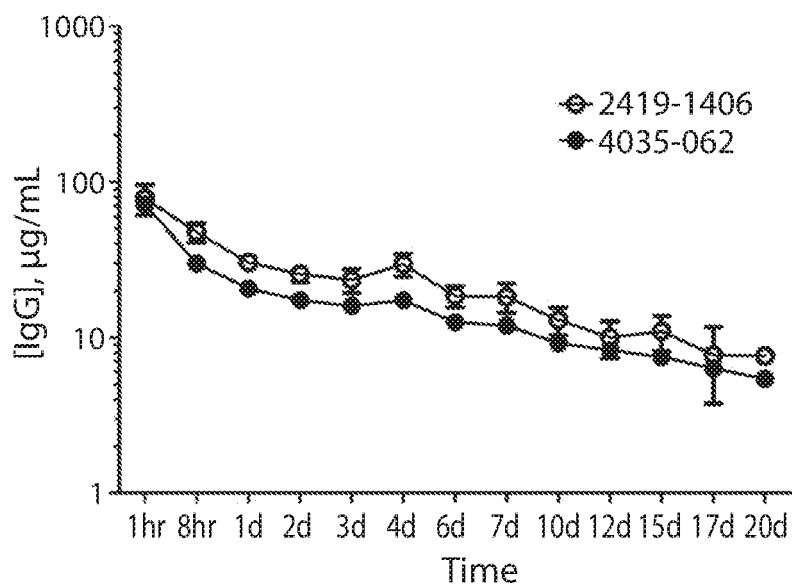


FIG. 40A

Antibody ID	Cmax (µg/mL)	Half-Life (hrs.)	AUC (hr*µg/ml)
2419-1406	101	183	10600
4035-062	72	282	7788

FIG. 40B

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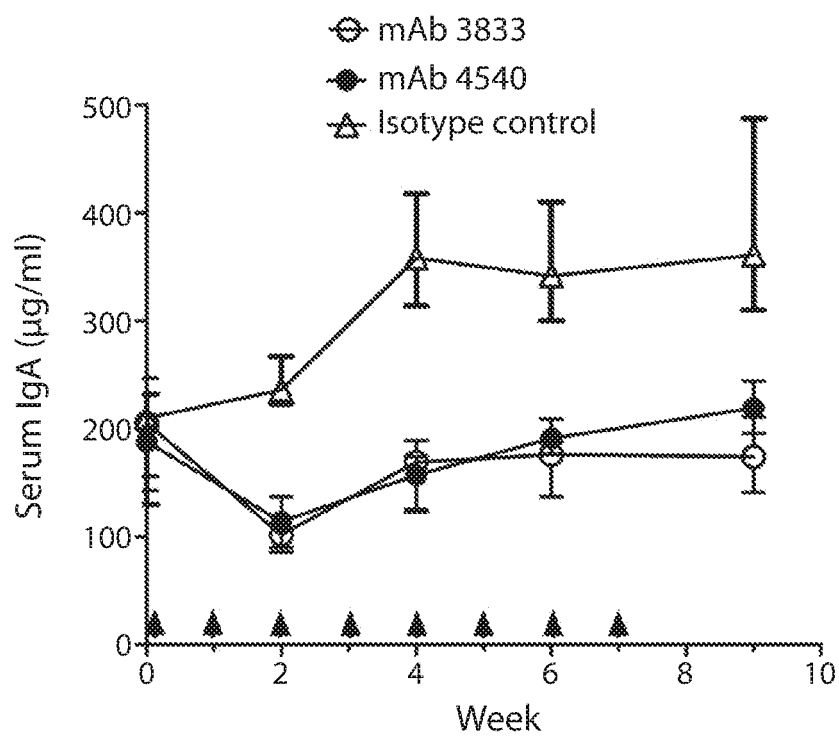


FIG. 41