RNF43 mRNA Expression Determined by SOLiD Whole Transcriptome Sequencing

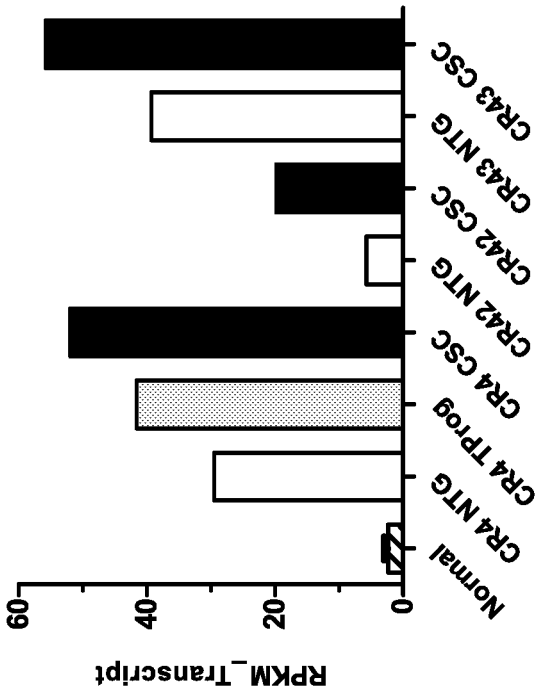

FIG. 1A

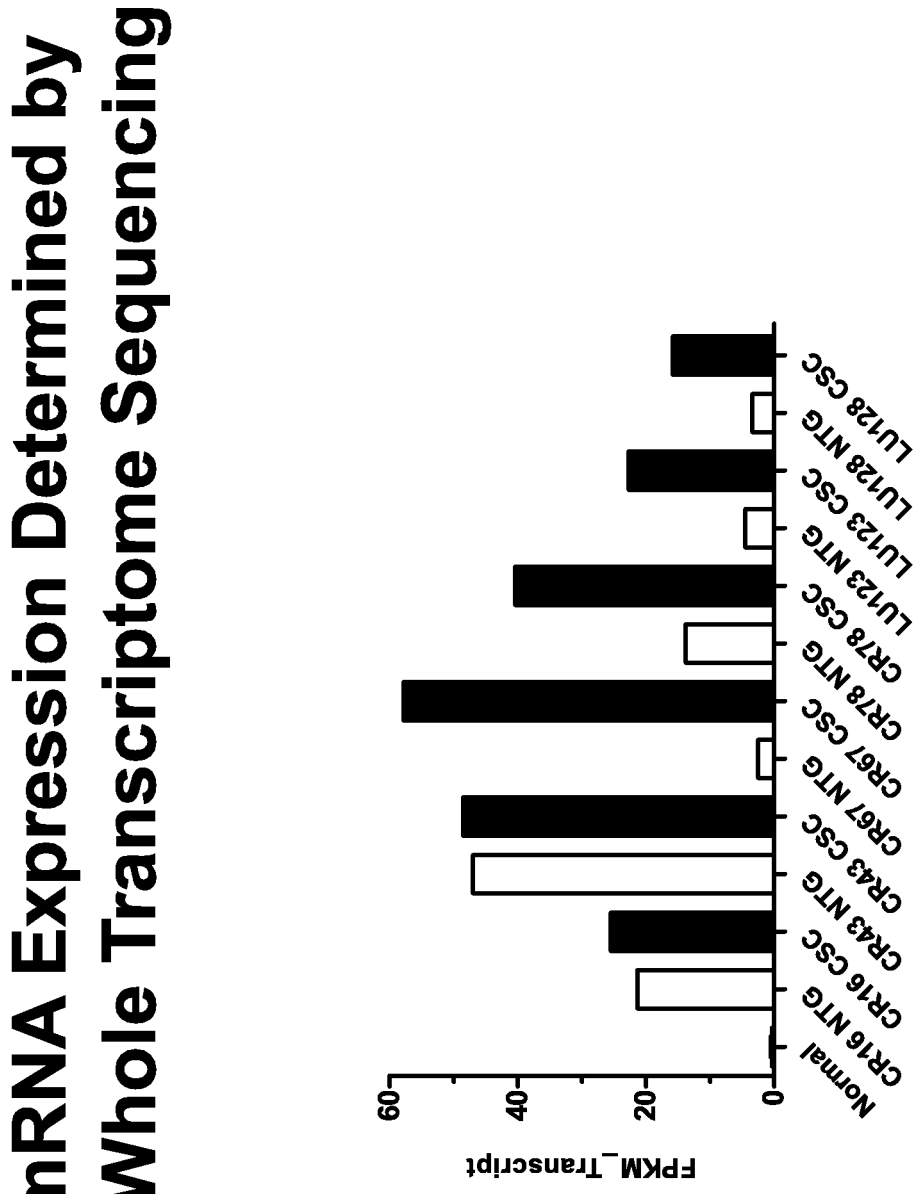
RNF43 mRNA Expression Determined by Illumina Whole Transcriptome Sequencing
FPKM_Transcript
0
20
40
60
Normal
CR16 NTG
CR16 CSC
CR43 NTG
CR43 CSC
CR67 NTG
CR67 CSC
CR78 NTG
CR78 CSC
LU123 NTG
LU123 CSC
LU128 NTG
LU128 CSC

FIG 1B

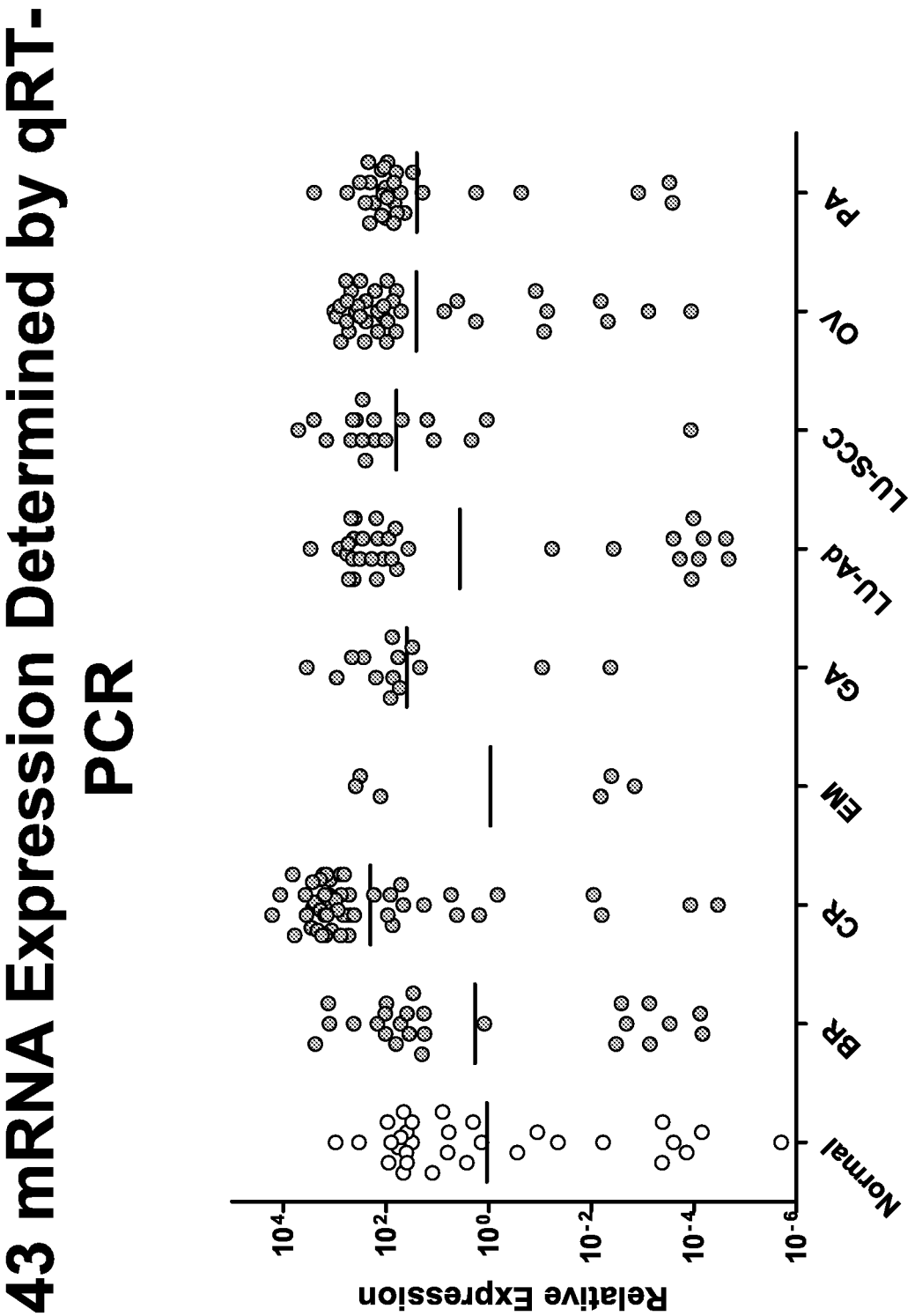
RNF43 mRNA Expression Determined by qRT-PCR
Relative Expression
10^4
10^2
10^0
10^-2
10^-4
10^-6
Normal
BR
CR
EM
GA
LU-AD
LU-SCC
OV
PA

FIG. 2A

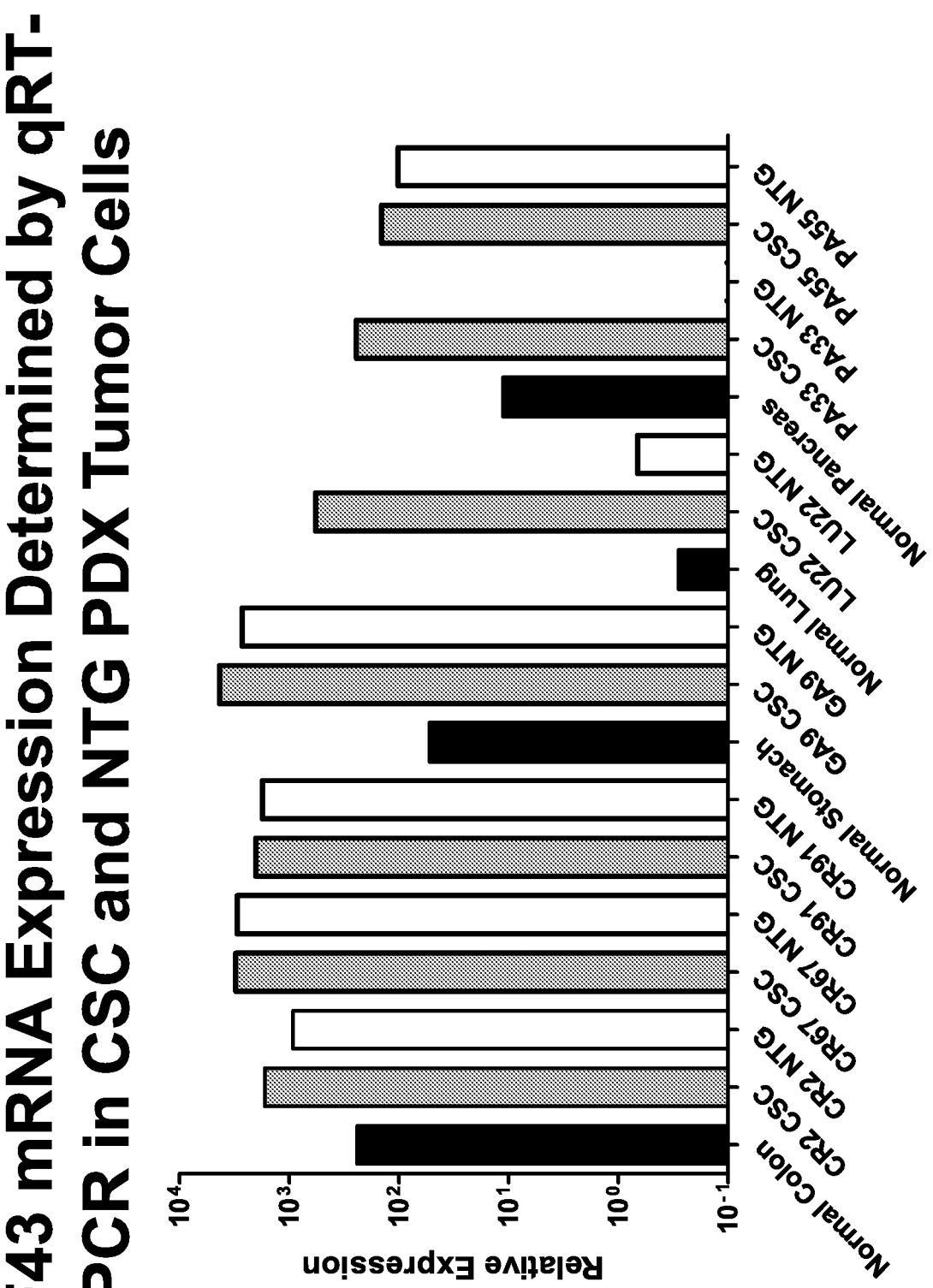
RNF43 mRNA Expression Determined by qRT-PCR in CSC and NTG PDX Tumor Cells
Relative Expression
10^{4}
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
Normal Colon
CR2 CSC
CR2 NTG
CR67 CSC
CR67 NTG
CR91 CSC
CR91 NTG
Normal Stomach
GA9 CSC
GA9 NTG
Normal Lung
LU22 CSC
LU22 NTG
Normal Pancreas
PA33 CSC
PA33 NTG
PA55 CSC
PA55 NTG

FIG. 2B

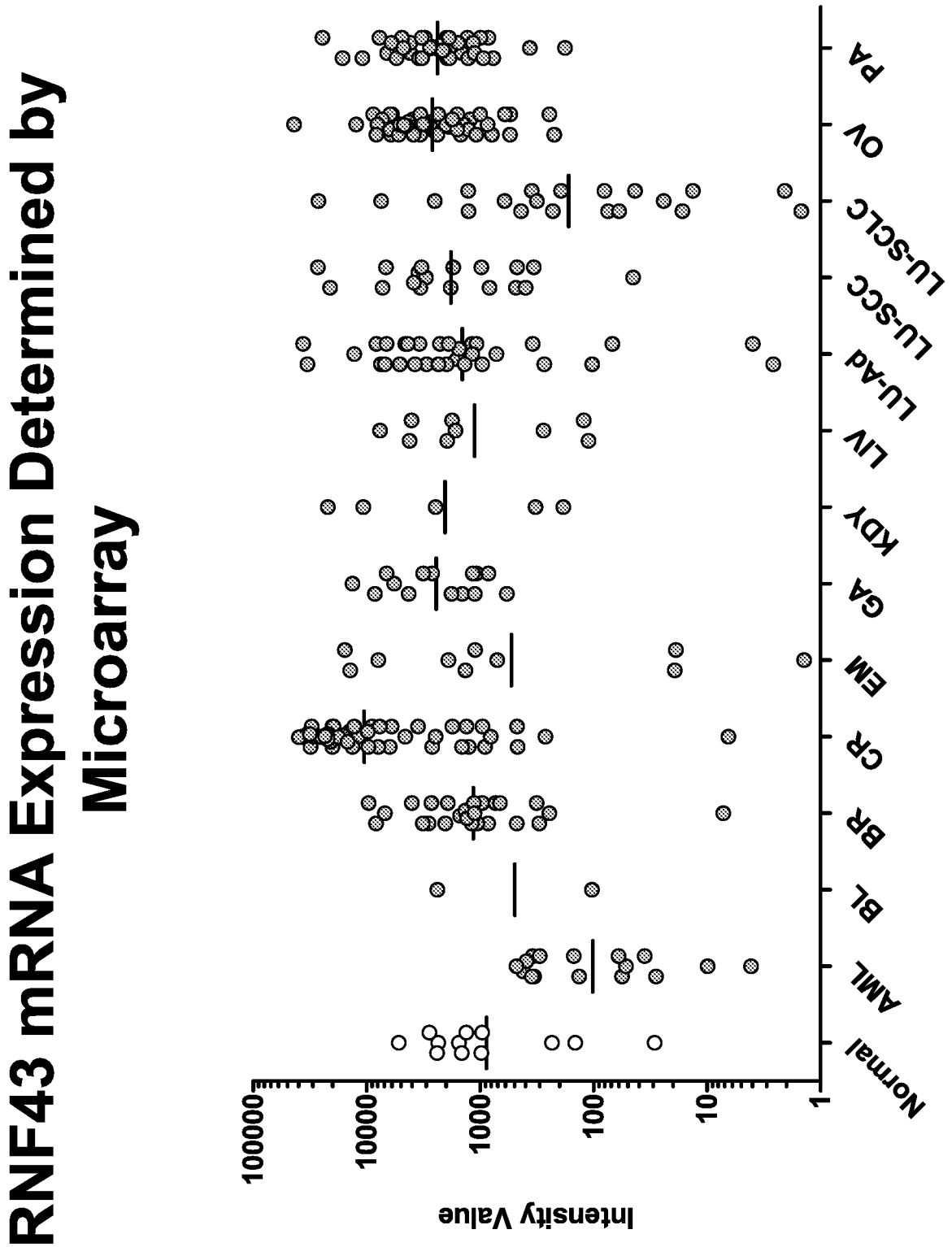
RNF43 mRNA Expression Determined by Microarray
Intensity Value
100000
10000
1000
100
10
1
Normal
AML
BL
BR
CR
EM
GA
KDY
LIV
LU-Ad
LU-SCC
LU-SCLC
OV
PA

FIG. 3

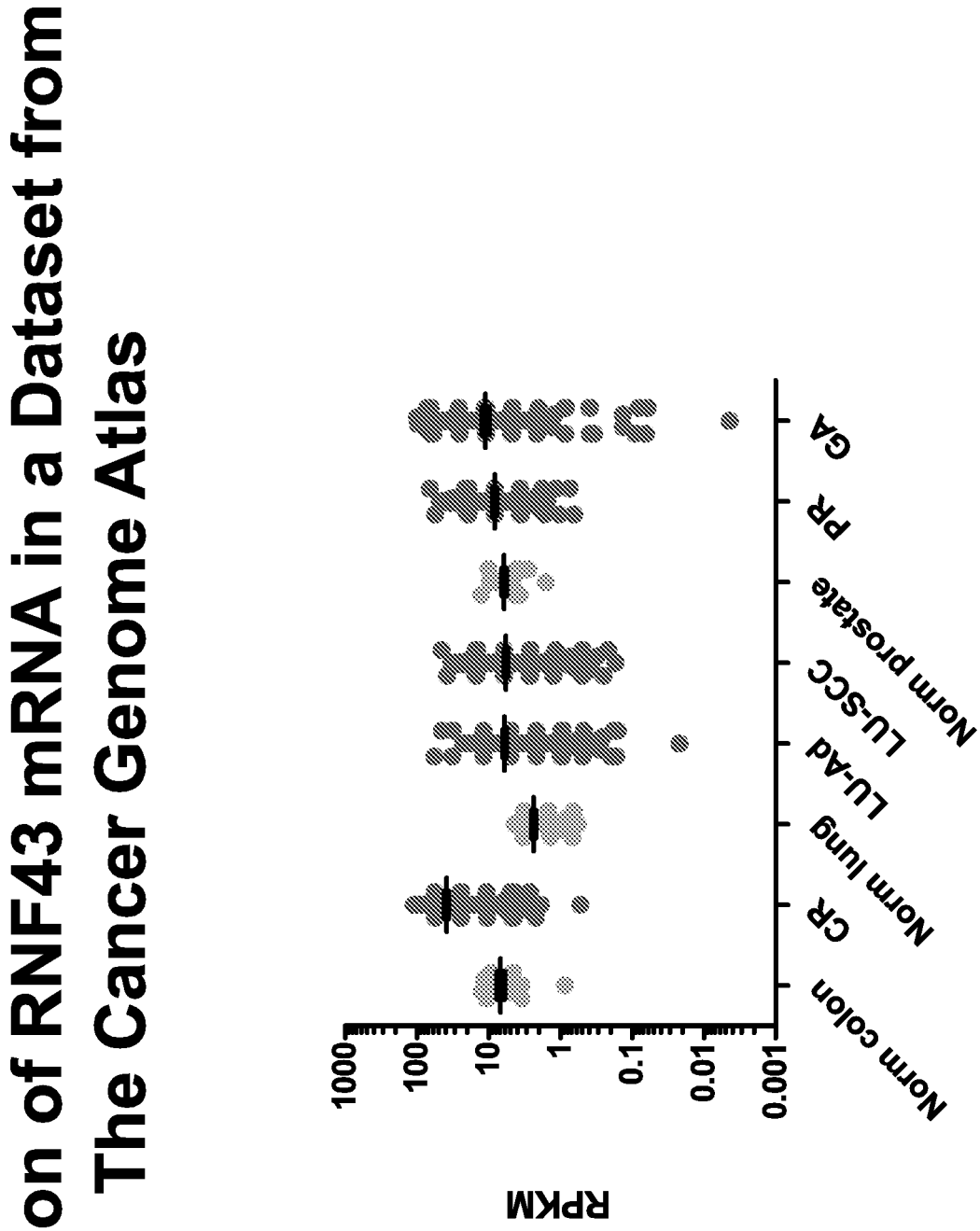
Expression of RNF43 mRNA in a Dataset from The Cancer Genome Atlas
RPKM
1000
100
10
1
0.1
0.01
0.001
Norm colon
CR
Norm lung
LU-AD
LU-SCC
Norm prostate
PR
GA

FIG. 4

Antibody Characteristics

Clone	Isotype	K_D	Bin	% RSPO binding to RNF43	fold TCF activity	% live at 250pM tmt
SC37.1	IgG2a/k					
SC37.2	IgG2a/k	220 nM	E	61	1.19	19.2
hSC37.2	hIgG1/k	120 nM				
SC37.3	IgG2a/λ	44 nM				54.8
SC37.4	IgG2a/k					
SC37.5						
SC37.6	IgG1/λ					78.4
SC37.7	IgG1/k					
SC37.8	IgG2a/λ			87		75.8
SC37.9	IgG2a/λ	160 nM				27.6
SC37.10	IgG2a/λ	5.8 nM		62	1.13	41.3
SC37.11	IgG1/k					
SC37.12	IgG2b/k					
SC37.13	IgG1/k					58.2
SC37.14	IgG1/k			52		78.6

FIG. 5A

Antibody Characteristics

Clone	Isotype	K_D	Bin	% RSPO binding to RNF43	fold TCF activity	% live at 250pM tmt
SC37.15	IgG1/k					
SC37.16	IgG2a/λ					
SC37.17	IgG1/k	9.3 nM	C	12	1.96	15.2
hSC37.17	hIgG1/k	1.2 nM				
rSC37.17	IgG1/k	9.3 nM				
SC37.18	IgG1/k					
SC37.19	IgG1/λ			91		57.1
SC37.20	IgG1/λ			79		76.5
SC37.21	IgG1/k		C	32		14.4
SC37.22	IgG1/λ		D	81		49.1
SC37.23	IgG1/k	23.7 nM		21		31.8
SC37.24				99		
SC37.25				78		94.3
SC37.26				77		87.5
SC37.27				103		101.7
SC37.28	IgG1/k	0.3 nM	A	6	1.64	9.4
SC37.29	IgG2a/k		C	86		54.3
SC37.30	IgG1/λ			78		81.0
SC37.31	IgG2a/k		D	111		103.2

FIG. 5A Cont.

Antibody Characteristics

Clone	Isotype	K_D	Bin	% RSPO binding to RNF43	fold TCF activity	% live at 250pM tmt
SC37.32	IgG1/k		A	102		24.4
SC37.33	IgG2a/λ		D	98		67.5
SC37.34	IgG1/λ			87		93.8
SC37.35	IgG1/λ			93		68.4
SC37.36	IgG1/λ			81		83.8
SC37.37	IgG1/k		B	88		34.9
SC37.38	IgG1/λ			75		89.2
SC37.39	IgG1/k	1.1 nM	B	51	1.17	18.2
hSC37.39	hIgG1/k	0.34 nM				
rSC37.39	IgG1/k	1 nM				
SC37.40	IgG1/k		C	76		79.5
SC37.41	IgG2a/k			11		17.1
SC37.42				83		114.7
SC37.43				81		59.9
SC37.44	IgG2a/k		D	86		32.2
SC37.45	IgG1/k		A			33.1
SC37.46	IgG1/k			84		28.3
SC37.47	IgG1/k			94		51.2
SC37.48	IgG1/k		B	85		53.8
SC37.49				81		28.6
SC37.50	IgG1/λ			81		86.3

FIG. 5A Cont.

Antibody Characteristics

Clone	Isotype	K_D	Bin	% RSPO binding to RNF43	fold TCF activity	% live at 250pM tmt
SC37.51	IgG2a/k			90		66.3
SC37.52	IgG1/λ		C	95		72.7
SC37.53	IgG1/k		C	24		19.9
SC37.54	IgG1/k			29		15.8
SC37.55	IgG1/λ			99		53.4
SC37.56	IgG1/k			100		18.0
SC37.57	IgG1/k			89		82.1
SC37.58				89		68.8
SC37.59	IgG2a/λ			83		26.2
SC37.60				78		77.8
SC37.61	IgG1/k		A			12.1
SC37.62	IgG1/k		A	12		78.6
SC37.63	IgG1/k		C	87		42.9
SC37.64	IgG1/k		C	79		40.4
SC37.65	IgG2b/k		C	77		58.7
SC37.66	IgG1/λ		B	80		82.4
SC37.67	IgG1/k	3.5 nM	A	13	1.45	12.1
hSC37.67	hIgG1/k	4.2 nM				
rSC37.67	IgG1/k	5.4 nM				
SC37.68	IgG1/k		C	19		16.4
SC37.69				71		27.2
SC37.70	IgG1/k		A	97		15.8

FIG. 5A Cont.

Antibody Characteristics

Clone	Isotype	K_D	Bin	% RSPO binding to RNF43	fold TCF activity	% live at 250pM tmt
SC37.71				84		59.8
SC37.72	IgG1/k		D	73		62.7
SC37.73	IgG1/k			86		63.2
SC37.74				72		76.0
SC37.75	IgG1/k			103		70.6
SC37.76	IgG1/k		C	62		27.6
SC37.77	IgG1/k		B	68	0.52	76.5
SC37.78	IgG1/k	10.8 nM	B	74		38.2
SC37.101	IgG2a/k			70	1.21	51.7
SC37.102	IgG2b/k			65	1.22	100.9
SC37.103	IgG2a/k			74	1.11	107.6
SC37.104	IgG1/k			75	1.23	94.6
SC37.105	IgG2b/k			72	1.21	103.5
SC37.106	IgG2a/k		B	64	1.23	21.0
SC37.107	IgG2b/k			80	1.23	100.9
SC37.108	IgG2a/k			78	1.31	80.8
SC37.109				75	1.25	71.0
SC37.110	IgG2b/k			80	0.99	69.2
SC37.111	IgG2a/k			81	0.85	78.7
SC37.112	IgG2b/k			83	0.78	86.2
SC37.113	IgG2b/k		B	22	0.90	16.9
SC37.114	IgG2b/k			71	0.64	101.3

FIG. 5A Cont.

Antibody Characteristics

Clone	Isotype	K_D	Bin	% RSPO binding to RNF43	fold TCF activity	% live at 250pM tmt
SC37.115	IgG2a/k			76	0.72	54.0
SC37.116	IgG2a/k			76	0.78	102.3
SC37.117	IgG2a/k			80	0.78	114.5
SC37.118	IgG2a/k			72	0.71	52.4
SC37.119	IgG2a/k			73	0.86	98.9
SC37.120	IgG1/k		A	53	0.83	62.7
SC37.121	IgG2a/k			82	0.65	109.8
SC37.122	IgG2b/k			81	0.76	54.3
SC37.123	IgG2a/k			83	0.76	98.0
SC37.124	IgG1/k			83	0.52	56.6
SC37.125	IgG2b/k			67	0.75	84.8
SC37.126	IgG2a/k			70	0.83	81.9
SC37.127	IgG2b/k		B	61	0.77	29.9
SC37.128	IgG2a/k			71	0.76	86.9
SC37.129	IgG2a/k			62	0.88	102.3
SC37.130	IgG2a/k			78	0.92	85.6
SC37.131	IgG2b/k			78	0.84	89.3
SC37.132	IgG2b/k		E	14	1.78	23.4
SC37.133	IgG2a/k			81	0.90	89.3
SC37.134	IgG2a/k			80	0.97	102.9
SC37.135	IgG2a/k			84	0.78	105.5

FIG. 5A Cont.

Antibody Characteristics

Clone	Isotype	K_D	Bin	% RSPO binding to RNF43	fold TCF activity	% live at 250pM tmt
SC37.136	IgG2b/k		F	65	0.61	24.0
SC37.137	IgG2b/k			71	0.83	87.5
SC37.138	IgG2a/k			72	0.62	100.8
SC37.139	IgG2a/k			83	0.67	85.5
SC37.140	IgG1/k			71	0.85	81.4
SC37.141	IgG2b/k		F	13	1.53	22.0
SC37.142	IgG2b/k			93	1.00	99.9
SC37.143	IgG2b/k			81	0.96	104.6
SC37.144	IgG2a/k			80	0.85	68.4
SC37.145	IgG2b/k			70	1.07	59.9
SC37.146	IgG1/k			60	0.68	65.3
SC37.147	IgG2b/k			85	0.91	106.6
SC37.148	IgG2a/k			83	0.49	109.8
SC37.149	IgG2a/k			79	1.08	84.4
SC37.150	IgG2a/k			68	1.14	81.8
SC37.151	IgG2a/k			81	1.03	47.9
SC37.152	IgG2a/k			67	1.01	52.4
SC37.153	IgG1/k			64	0.97	75.2
SC37.154	IgG1/k			68	1.06	72.6

FIG. 5A Cont.

Antibody Characteristics

Clone	Isotype	K_D	Bin	% RSPO binding to RNF43	fold TCF activity	% live at 250pM tmt
SC37.155	IgG2a/k			91	1.10	102.5
SC37.156	IgG2a/k			88	1.11	65.3
SC37.157	IgG2a/k			90	1.14	52.2
SC37.158	IgG2a/k			85	0.55	66.5
SC37.159	IgG2b/k			87	0.79	100.3
SC37.160	IgG2a/k			85	0.75	85.7
SC37.161	IgG2b/k			73	0.98	71.8
SC37.162	IgG2a/k			73	1.11	75.3
SC37.163	IgG2a/k			77	0.99	67.2
SC37.164	IgG2a/k			76	0.97	89.8
SC37.165	IgG2a/k			76	0.91	103.3
SC37.166	IgG2b/k			51	0.84	64.0
SC37.167	IgG2a/k			84	0.94	103.2
SC37.168	IgG2a/k			91	0.93	95.4
SC37.169	IgG2b/k		A	17	1.20	20.8
SC37.170	IgG2b/k		A	20	1.01	35.8
SC37.171	IgG2b/k			87	0.54	97.2
SC37.172	IgG2a/k		F	66	0.74	22.5
SC37.173				71	1.01	67.0

FIG. 5A Cont.

Antibody Characteristics

Clone	Isotype	K_D	Bin	% RSPO binding to RNF43	fold TCF activity	% live at 250pM tmt
SC37.174	IgG2b/k			74	0.93	61.5
SC37.175	IgG2a/k			78	0.86	82.5
SC37.176	IgG2a/k			62	0.87	58.5
SC37.177	IgG2b/k		E	12	1.30	39.6
SC37.178	IgG2b/k		E	14	1.40	24.5
SC37.179	IgG2a/k			74	0.95	90.2
SC37.180	IgG2a/k			83	0.91	83.8
SC37.181	IgG2b/k			83	0.86	73.6
SC37.182	IgG2a/k			89	0.98	82.6
SC37.183	IgG1/k			90	0.58	82.2
SC37.184				90	0.57	112.0
SC37.185	IgG2b/k		E	9	1.74	26.4
SC37.186	IgG2b/k			78	0.97	80.1
SC37.187	IgG2a/k			80	0.79	103.9
SC37.188	IgG2a/k			79	0.81	91.3
SC37.189	IgG2a/k			56	0.91	59.4
SC37.190	IgG2a/k			82	0.71	103.3
SC37.191	IgG2b/k		C	78	0.92	36.5
SC37.192	IgG2a/k			96	0.93	77.1
SC37.193	IgG2a/k		F	62	0.96	20.9

FIG. 5A Cont.

Antibody Characteristics

Clone	Isotype	K_D	Bin	% RSPO binding to RNF43	fold TCF activity	% live at 250pM tmt
SC37.194				100	0.81	108.7
SC37.195	IgG2a/k			90	0.53	100.5
SC37.196	IgG2b/k		F	72	0.93	34.7
SC37.197	IgG1/k			74	1.03	97.6
SC37.198	IgG2a/k			77	0.98	46.0
SC37.199	IgG2b/k			61	0.94	89.8
SC37.200	IgG2a/k			79	0.92	90.7
SC37.201	IgG1/k			85	0.95	99.4
SC37.202	IgG2b/k		E	14	1.50	26.3
SC37.203	IgG2a/k			85	0.94	70.7
SC37.204	IgG2a/k			85	0.99	88.3
SC37.205	IgG2a/k			84	1.01	71.9
SC37.206	IgG2a/k			88	0.75	52.1
SC37.207	IgG2b/k			73	0.65	51.1
SC37.208	IgG2b/k		F	71	1.04	19.3
SC37.209	IgG2a/k			72	0.66	89.1
SC37.210	IgG1/k			76	0.71	100.0
SC37.211	IgG2b/k			66	0.64	85.4
SC37.212	IgG2a/k		F	61	0.77	21.6
SC37.213	IgG1/k			83	0.81	72.7

FIG. 5A Cont.

Antibody Characteristics

Clone	Isotype	K_D	Bin	% RSPO binding to RNF43	fold TCF activity	% live at 250pM tmt
SC37.214	IgG2a/k			76	0.67	65.2
SC37.215	IgG2b/k			84	0.70	93.6
SC37.216	IgG2a/k			75	0.80	56.8
SC37.217	IgG2a/k		F	70	0.76	21.8
SC37.218	IgG2b/k		B	41	0.96	15.9
SC37.219	IgG2b/k		E	15	1.65	18.9
SC37.220	IgG2b/k		A	13	1.04	14.9
SC37.221	IgG1/k			76	0.92	94.0
SC37.222	IgG2a/k			79	0.71	104.2
SC37.223	IgG2b/k		B	38	0.89	18.7
SC37.224	IgG1/k			82	0.82	104.4
SC37.225	IgG1/k			83	0.89	105.7
rSC37.226	IgG1/k	1.3 nM				
SC37.226	IgG2b/k		F	73	0.95	26.8
SC37.227	IgG2b/k			73	0.85	93.8
SC37.228	IgG2b/k		F	73	1.02	32.6
SC37.229	IgG2a/k			91	0.97	86.1
SC37.230	IgG2a/k			88	0.81	73.4
SC37.231	IgG2a/k		A	13	3.10	12.2
SC37.232	IgG2a/k		F	63	1.14	20.2

FIG. 5A Cont.

Antibody Characteristics

Clone	Isotype	K_D	Bin	% RSPO binding to RNF43	fold TCF activity	% live at 250pM tmt
SC37.233	IgG2b/k		B	34	0.94	29.8
SC37.234	IgG2b/k			84	1.04	19.9
SC37.235	IgG2a/k			84	0.93	101.2
SC37.236	IgG2a/k		E	16	1.66	33.2
rSC37.236	IgG1/k	13 nM				
SC37.237	IgG2a/k			71	1.05	56.4
SC37.238	IgG1/k			91	1.04	72.0
SC37.239	IgG2b/k		E	13	1.63	32.3
SC37.240	IgG2b/k				1.04	96.9
SC37.241	IgG2a/k			67	1.10	94.3
SC37.242	IgG2a/k			91	0.83	104.4
SC37.243	IgG2b/k			94	0.72	97.2
SC37.244	IgG2a/k			90	0.80	64.3
SC37.245	IgG1/k			82	0.95	99.8
SC37.246	IgG2a/k			85	0.75	87.3
SC37.247	IgG2b/k		A	12	0.92	61.0
SC37.248	IgG2a/k			84	0.92	110.7
SC37.249	IgG2a/k			88	0.96	72.8
SC37.250	IgG2a/k			92	0.85	82.0

FIG. 5A Cont.

Alignment of Human RNF43 ECD with Human ZNRF3 ECD

```
                        1                                                                                80
   humRNF43 NP_060233    (1) ----------MSGGHQLQLAALWPWLLMATLQAG---FGRTGLVLAAAVESERSAEQKAIIRVIPLKMDPTGKLN---LT
                                       *     *      *               ** ****      *   *   *      * *
humZNRF3 NP_001193927    (1) MRPRSGGRPGATGRRRRRLRRRPRGLRCSRLPPPPPLPLLLGLLLAAAGPGAARAKETAFVEVVLFESSPSGDYTTYTTG

                            81                                                                           160
   humRNF43 NP_060233   (65) LEGVFAGVAEITPAEGKLMQSHPLYLCN-ASDDDNLEPGFISIVKLESPRRAPRPCLSLASKARMAGERGASAVLFDITE
                            * * *        ***   * *** ***     *  * *    **** *   * ***    **  *  *** ** **  *
humZNRF3 NP_001193927   (81) LTGRFSRAGATLSAEGEIVQMHPLGLCNNNDEEDLYEYGWVGVVKLEQPELDPKPCLTVLGKAKRAVQRGATAVIFDVSE

                            161                                                 219
   humRNF43 NP_060233  (144) DRAAAEQLQQP--LGLTWPVVLIWGNDAEKLMEFVYKNQKAHVRIELKEP-PAWPDYDV  SEQ ID NO: 3
                               *  ** *     *  ***   * ** ***  * *   *  **    *       *
humZNRF3 NP_001193927  (161) NPEAIDQLNQGSEDPLKRPVVYVKGADAIKLMNIVNKQKVARARIQHRPPRQPTEYFDM  SEQ ID NO: 4
```


FIG. 5B

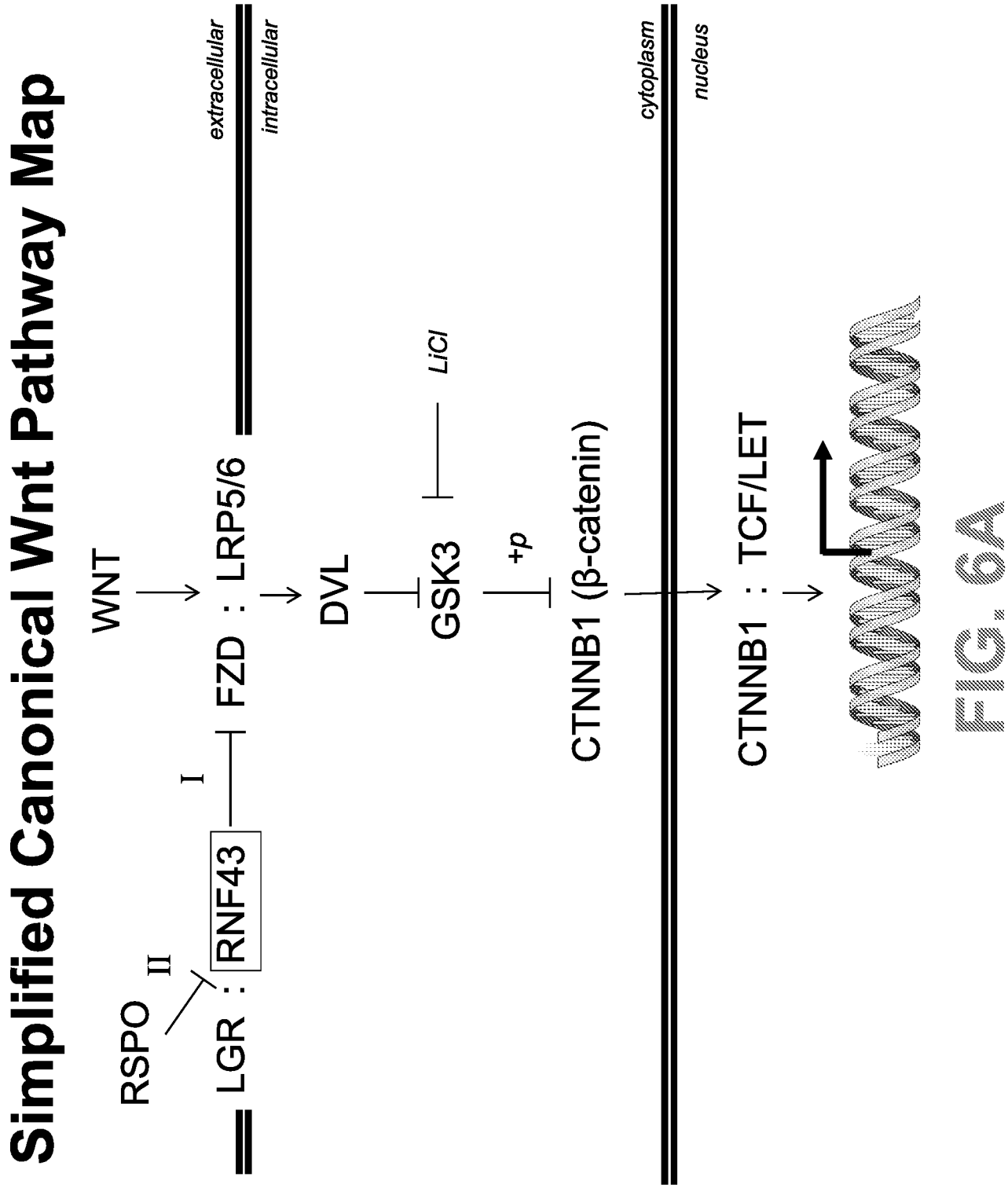
Simplified Canonical Wnt Pathway Map
extracellular
intracellular
cytoplasm
nucleus
WNT
RSPO
II
LGR
:
RNF43
I
FZD
:
LRP5/6
DVL
GSK3
LiCl
+p
CTNNB1 (β-catenin)
CTNNB1
:
TCF/LET

FIG. 6A

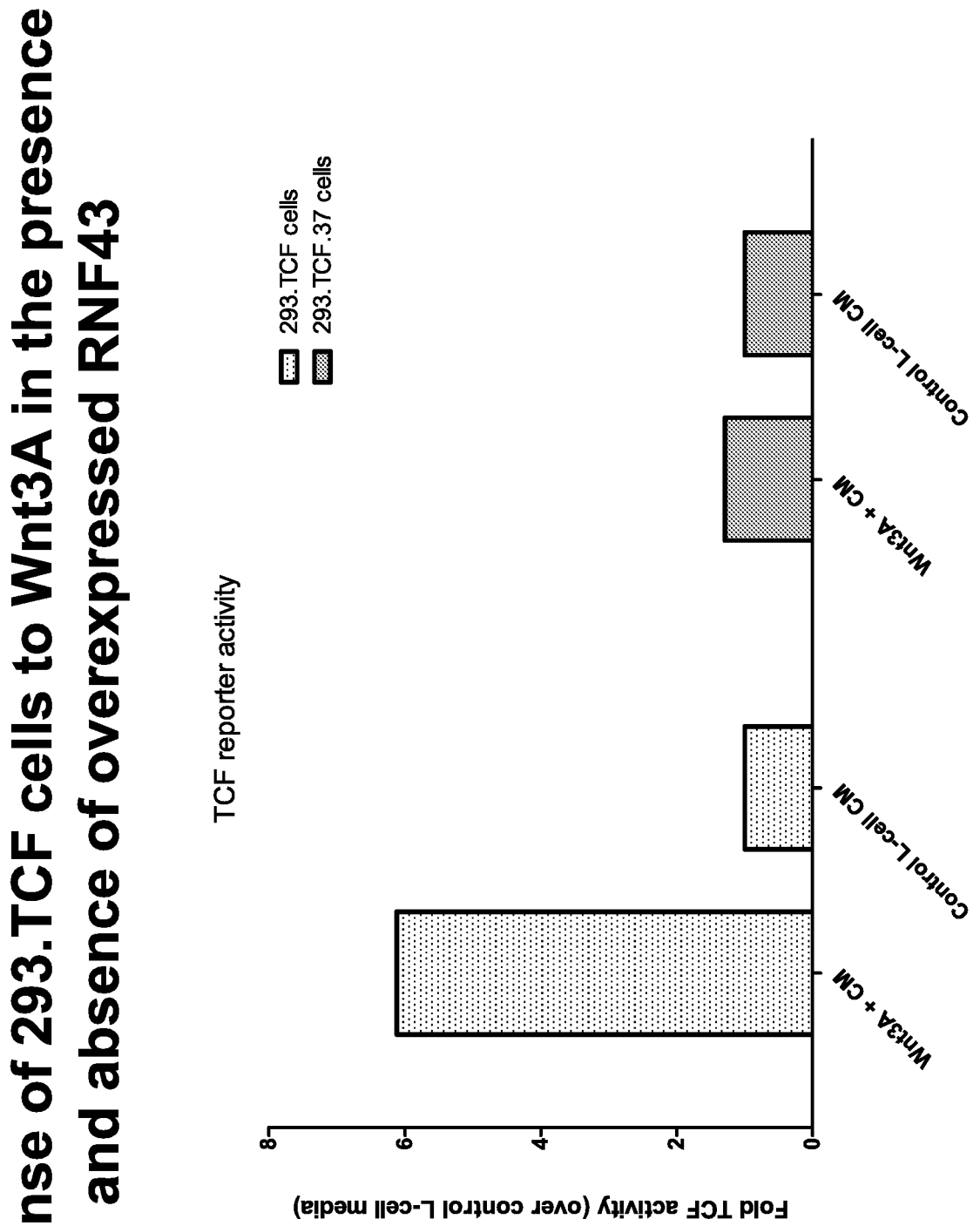
Response of 293.TCF cells to Wnt3A in the presence and absence of overexpressed RNF43
TCF reporter activity
293.TCF cells
293.TCF.37 cells
Fold TCF activity (over control L-cell media)
0
2
4
6
8
Wnt3A + CM
Control L-cell CM
Wnt3A + CM
Control L-cell CM

FIG. 6B

Anti-RNF43 Mouse Antibody Amino Acid Variable Region Light Chain Sequences

Name	FR1	CDRL1	FR2	CDRL2	FR3	CDRL3	FR4	SEQ ID NO
SC37.1	DIVMSQSPSSLPVSVGERVTMSC	KSSQSLLYSTNQKNYLA	WYQQKPGQSPKLLIY	WASTRES	GVPDRFTGSGSGTDFTLTISGVKAEDLAVYYC	QQYYNYPRT	FGGGTKLEIK	22
SC37.2	DIVMSQSPSSLAVSVGEKVTMSC	KSSQTLLYYSNQKNYLA	WYQRKPGLSPKLLIY	WASTRDS	GVPDRFTGSGSGTDFTLTISSVKAEDLAVYYC	QQYYNYPLT	FGAGTKLELK	26
SC37.3	QAVVTQESALTTSPGETVTFTC	RSSTGAVTTSNYAN	WVQEKPDHLFTGLIG	GTNNRAP	GVPARFSGSLIGDKAALTITGAQTEDEAIYFC	ALWYSNHWV	FGGGTKLTVL	30
SC37.4	DIQMTQTTSSLSASLGDRVTISC	RASQDISNYLN	WYQQKPDGTVKLLIY	YTSRLHS	GVPSRFSGSGSGTDYSLTISNLEQDDIATYFC	QQGNTLYT	FGGGTKLEIK	34
SC37.6	QAVVTQESALTTSPGETVTLTC	RSSTGAVTTSNYAN	WVQEKPDHLFTGLIG	GTNNRAP	GVPARFSGSLIGDKAALTITGAQTEDEAIYFC	VLWYSNHWV	FGGGTKLTVL	38
SC37.7	DIVMTQSHKFMSTSAGDRVSITC	KASQDVGTAVA	WYQQKPGQSPKILIY	WASTRHT	GVPDRFTGSGSGTDFTLTISNVQSEDLADYFC	QQYSSYPLT	FGAGTKLELK	42
SC37.8	QAVVTQESALTTSPGETVTLTC	RSSTGAVTTSNYAN	WVQEKPDHLFTGLIG	GTNNRAP	GVPARFSGSLIGDRAALTITGAQTEDETIYFC	ALWLSNHWV	FGGGTKLTVL	46
SC37.9	QAVVTQESALTTSPGETVTLTC	RSTTGAVTTSNYAN	WVQEKPDHLFTGLMG	GTNNRAP	GVPARFSGSLIGDKAALTITGAQTEDEAIYFC	ALWYSNHWV	FGGGTKLTVL	50
SC37.10	QAVVTQESALTTSPGETVTLTC	RSSTGAVTTSNYAN	WVQEKPDHLFTGLIG	GTDNRAP	GVPARFSGSLIGDRAALTITGAQTEDAAIYFC	ALWSSNHWV	FGGGTKLTVL	54
SC37.11	ENVLTQSPAIMSASPGEKVTMTC	RASSSVRSSYFH	WYQQKSGASPKLWIY	STSNLAS	GVPARFSGSGSGTSYSLTISSVEAEDAATYYC	QQYSGYPLT	FGSGTKLEIK	58
SC37.12	DIVMTQSPSSLAMSVGQKVTMSC	KSSQSLLNSYSQKNYLA	WYQQKPGQSPKLLIY	FASTRES	GVPDRFIGSGSGTDFTLTISSVQAEDLADYFC	QQHYTTPLT	FGAGTKLELK	62
SC37.13	DIVMSQSPSSLAVSVGEKVSMSC	KSSQSLLYSSNQKNYLA	WYQQKPGQSPKLLIY	WASTRES	GVPDRFTGSGSGTDFTLTISSVKAEDLAVYYC	QQYYNYWT	FGGGTKLEIK	66

FIG. 7A

Anti-RNF43 Mouse Antibody Amino Acid Variable Region Light Chain Sequences

Name	FR1	CDRL1	FR2	CDRL2	FR3	CDRL3	FR4	SEQ ID NO
SC37.15	DIVLTQSPASLAVSLGQRATISC	RASESVEYYGTSLMQ	WYQQKPGQPPKLLIY	GASNVES	GVPARFSGSGSGTDFSLNIHPVEEDDIAMYIC	QQSRKVPWT	FGGGTKLEIK	70
SC37.16	QAVVTQESALTTSPGETVTLTC	RSSTGAVTTSNYAN	WVQEKPDHLFTGLIG	GTNNRTP	GVPARFSGSLIGDKAALTITGTQTEDEAIYFC	ALWYSNHWV	FGGGTKLTVL	74
SC37.17	NIVLTQSPASLAVSLGQRATISC	RASESVDSYGNSFMH	WYQQKPGQPPKLLIY	LASNLES	GVPARFSGSGSRTDFTLTIDPVEADDAATYYC	QQNNEDPLT	FGAGTKLELK	78
SC37.19	QAVVTQESALTTSPGETVTLTC	RSSTGAVTTSNYAN	WVQEKPDHLFTGLIG	GTNNRAP	GVPARFSGSLIGDKAALTITGAQTEDEAIYFC	ALWSNNHWV	FGGGTKLTVL	82
SC37.20	QAVVTQESALTTSPGETVILTC	RSSTGAVTTSNYAN	WVQEKPDHLFTGLIG	GTNNRAP	GVPARFSGSLIGDKAALTITGAQTEDEAIYFC	ALWYSNHWV	FGGGTKLTVL	86
SC37.22	QAVVTQESALTTSPGETVTLTC	RSSTGAVTTSNYAN	WVQEKPDHLFTGLIG	GTNNRAP	GVPARFSGSLIGDKAALTITGAQTEDAAIYFC	ALWCSNHWV	FGGGTKLTVL	92
SC37.23	DIQMTQSSSSFSVSLGDRVTITC	KASEDIYNRLA	WFQQKPGNAPRLLIS	GATSLET	GVPSRFSGSRSGEDYTLIITSLQTEDVATYYC	QQFWTTPPT	FGGGTKLEIK	96
SC37.29	DIVLTQSPATLSVPPGDGVSLSC	RASQSICNYLH	WFQQKSHESPRLLIK	CASQSIS	GIPSRLSGSGSGTDFTLSINSVETEDFGMYFC	QQSNNWPWT	LGGGSRVEIK	102
SC37.37	QIVLTQSPAIMSASPGEKVTITC	SASSSVSYMH	WFQQKPGTSPKLWIY	GTSNLAS	GVPARFSGSGSGTSYSLTISRMEAEDAATYYC	QQRSSYPPYT	FGGGTKLEIK	106
SC37.39	DIVMTQSQKFMSTSGGDRVSVTC	KASQNVGINVA	WYQQKPGQSPKALIY	SASYRYS	GVPNRFTGSGSGTDFTLTISNVQSEDLGDYFC	HQYKTYPYT	FGGGTKLEIK	110
SC37.40	NIVLTQSPASLAVSLGQRATISC	RARESVDTYGNSFIH	WYQQKPGQPPKLLIY	LASNLES	GVPARFSGSGSRTDFTLTIDPVEADDAATYYC	QQNNEDPLT	FGAGTKLELK	114
SC37.41	NIVLTQSPASLAVSLGQRATISC	RASESVDSYGNSFMH	WYQQKPGQPPKLLIY	LASNLES	GVPARFSGSGSRTDFTLTIDPVEADDVATYYC	QQNNEDPYT	FGGGTKLEIK	118

FIG. 7A Cont.

Anti-RNF43 Mouse Antibody Amino Acid Variable Region Light Chain Sequences

Name	FR1	CDRL1	FR2	CDRL2	FR3	CDRL3	FR4	SEQ ID NO
SC37.44	DIVLTQSPATLSVTPGDRVSLSC	RASQNISNYLH	WFQQKSHESPRLLIN	YASQSIS	GIPSRFSGSGSGTDFTLSFNSVETEDFGLYFC	QQSNSWPWT	FGGGTKLEIK	122
SC37.45	DIQMTQSSSSFSVSLGDRVTITC	KASEDIYNRLA	WYQQKPGNAPRLLIS	GATSLET	GVPSRFSGSGSGKDYTLSITSLQTEDVATYHC	QQNWSTPPT	FGGGTKLEIK	124
SC37.47	NIVLTQSPASLAVSLGQRATISC	RASESVDTYGNSFIH	WYQQKPGQPPKLLIY	LASNLES	GVPARFSGSGSRTDFTLTIDPVEADDAATYYC	QQNNEDPLT	FGAGTKLELK	128
SC37.48	DIKMTQSPSSMYASLGERVTITC	KASQDINSYLS	WFQQKPGKSPKTLIY	RAKRLLD	GVPSRFSGSGSGQDYSLTISSLEYEDMGIYYC	LQYDEFPYT	FGGGTKLEIK	132
SC37.51	DIVLTQSPATLSVPPGDGVSLTC	RASQSICNYLH	WYQQKSHESPRLLIK	YTSQSIS	GIPSRFSGCGSGTDFTLSINSVETEDFGMYFC	QQSNSWPWT	FGGGTKLEIK	136
SC37.72	QAVVTQESALITSPGETVTLTC	RSSTGAVTTSNYAN	WVQEKPDHLFTGLIG	GTNNRAP	GVPARFSGSLIGDKAALTITGAQTEDEAIYFC	ALWYSNHWV	FGGGTKLTVL	140
SC37.75	NIVLTQSPASLAVSLGQRATISC	RASESVDTYGNSFIH	WYRQKPGQPPKLLIY	LASNLES	GVPARFSGSGSRTDFTLTIDPVEADDAATYYC	QQNNEDPLT	FGAGTKLELK	144
SC37.77	DIKMTQSPSSMYASLGERVTITC	KASQDINSYLS	WFQQKPGNSPKTLIY	RANRLLD	GVPSRFSGSGSGQDYSLTISSLDYEDMGIYYC	LQYDEFPYT	FGGGTKLEIK	146
SC37.108	DVVMTQTPLTLSVTIGQPASISC	KSSQSLLDSDGKTYLN	WLLQRPGQSPKRLIY	LVSKLDS	GVPDRFTGSGSGTDFTLKISRVEAEDLGVYYC	WQGTHSPWT	FGGGTKLEIK	150
SC37.122	DVLMTQTPLSLPVSLGDQASISC	RSSQTIVHSDGNTYLE	WYLQKPGQSPKLLIY	KVSNRFS	GVPDRFSGSGSGTDFTLKISRVEAEDLGVYYC	FQGSHVPWT	FGGGTKLEIK	154
SC37.127	DIQMTQSPASLSVSVGETVTITC	RASENIYSKLG	WYQQKQGKSPQLLVY	AATNLAD	GVPSRFSGSGSGTQYSLKINSLQSEDFGSYYC	QHFWGTPYT	FGGGTKLEKK	158
SC37.136	DIVMTQAAPSVPVTPGESVSISC	RSSKSLLHSNGNTYLY	WFLQRPGQSPQFLIY	RMSNLAS	GVPDRFSGSGSGTAFTLRISRVEAEDVGVYYC	MQHLEYPFT	FGGGTKLEIK	160

FIG. 7A Cont.

Anti-RNF43 Mouse Antibody Amino Acid Variable Region Light Chain Sequences

Name	FR1	CDRL1	FR2	CDRL2	FR3	CDRL3	FR4	SEQ ID NO
SC37.141	DIQMTQSTSSLSASLGDRVTISC	RASQDISNYLN	WYQQKPDGTVKPLIY	YTSRLHS	GVPSRFSGSGSGTDYSLTISNLDQEDIATYFC	QQGNTLPFT	FGSGTKLAIE	164
SC37.150	DVVMTQTPLSLPVSLGDQASISC	RSSQSLVHSNGNTYLH	WYLQKPGQSPKLLIY	KVSNRFS	GVPDRFSGSGSGTDFTLKISRVEAEDLGVYFC	SQSTHVPLT	FGAGTKLELK	168
SC37.160	QIVLTQSPAIMSASPGEKVSITC	SASSSVSYMH	WFQQKPGTSPKLWIY	STSNLAS	GVPTRFSGSGSGTSYSLTISRMEAEDAATYYC	QQRSNYPFT	FGSGTKLEIK	172
SC37.163	DVLMTQTPLSLPVSLGDQASISC	RSSQSIVHSNGNTYLQ	WYLQKPGQSPKLLIY	KVSNRFS	GVPDRFSGSGSGTDFTLKISRVEAEDLGVYYC	FQGSHVPPT	FGGGTKLEIK	176
SC37.169	DIVMTQSQKFMSTSVGDRVSVTC	KASQNVGTNVA	WFQQKPGQSPKLLIY	SASYRYS	GVPDRFTGSGSGTDFTLTISNVQSEDLAEFFC	QQYNTYPLT	FGAGTKLELK	180
SC37.170	DIVMTQSHKFMSTSVGDRVSITC	KASQDVSTAVA	WYQQKPGQSPKLLIY	SASYRYT	GVPDRFTGTGSGTDFTFTISSVQAEDLAVYYC	QQHYSTPLT	FGAGTKLELK	184
SC37.177	DIVMSQSPSSLAVSVGEKVTMSC	KSSQSLLYSTNQKNYLA	WYQQKPGQSPKLLIY	WASTRES	GVPDRFTGSGSGTDFTLTISSVKAEDLAVYYC	QQYYDYWT	FGGGTKLEIK	190
SC37.185	DIVMSQSPSSLAVSVGEKVTMSC	KSSQSLLYSRNQKNYLA	WYQQKPGQSPKLLIY	WASTRES	GVPDRFTGSGSGTDFTLTISSVKAEDLAVYYC	QQYYSYWT	FGGGSKLEIN	194
SC37.191	RIVMTQTPKSLLVSAGDRVTITC	KASQSVSNDVT	WYQQKPGQSPKLLIY	YASNRNT	GVPDRFTGSGYGTDFTFTISTVQAEDLAVYFC	QQDYGSPFT	FGSGTKLEIK	198
SC37.193	DIVMTQDAPSIPVTPGESVSISC	RSSKSLLHSNGNTYLY	WFLQRPGQSPQLLIY	RMSNLAS	GVPDRFSGSGSGTAFTLRISRVEAEDVGVYYC	MQHLEYPFT	FGSGTKLEIK	202
SC37.196	DIVMTQAAPSVPVTPGESVSISC	RSSKSLLHSNGNTYLY	WFLQRPGQSPQLLIY	RMSNLAS	GVPDRFSGSGSGTAFTLRISRVEAEDVGVYYC	MQHLEYPFT	FGSGTKLEIK	206
SC37.202	DIVMSQSPSSLAVSVGEEVTMSC	KSSQSLLYSTNQKNYLA	WYQQKPGQSPKLLIY	WASTRES	GVPDRFTGSGSGTDFTLTISSVKAEDLAVYYC	QQYYDYYT	FGGGTKLEIK	210

FIG. 7A Cont.

Anti-RNF43 Mouse Antibody Amino Acid Variable Region Light Chain Sequences

Name	FR1	CDRL1	FR2	CDRL2	FR3	CDRL3	FR4	SEQ ID NO
SC37.212	DIVMTQAVPSVPVTPGESVSISC	RSSKSLLHSNGNTYLY	WFLQRPGQSPQFLIY	RMSNLAS	GVPDRFSGSGSGTAFTLRISRVEAEDVGVYYC	MQHLEYPFT	FGGGTRLEIK	214
SC37.223	DIQMTQTTSSLSASLGDRVTISC	SASQGIGNYLN	WYQQKPDGTVKLLIY	YTSSLNS	GVPSRFSGSGSGTDYSLTISNLEPEDIATYFC	QQYSKLPYT	FGGGTKLEIK	220
SC37.226	DIVMTQAAPSVPVTPGESVSISC	RSSKSLLHSNGNTYLY	WFLQRPGQSPQVLIY	RMSNLAS	GVPDRFSGSGSGTAFTLRISRVEAEDVGVYYC	MQHLEYPFT	FGSGTKLEIK	224
SC37.231	DIVMTQSQKFMSTSVGDRVSITC	KASQSVRPAVA	WYQQKPGQSPKALIY	LASNRHT	GVPDRFTGSGSGTDFTLTISNVQSEDLADYFC	LQHWNYPYT	FGGGTKLEIK	228
SC37.233	DIQMTQTTSSLSASLGDRVTISC	SASQGISNYLN	WYQQKPDGTVKLLIY	YTSSLHS	GVPSRFSGSGSGTDYSLTISNLEPEDIATYYC	QQYRKLPYT	FGGGTKLEIK	234
SC37.236	DIVMSQSPSSLAVSVGEKVTMSC	KSSQSLLYSRNQKNYLA	WYQQKPGQSPKLLIY	WASTRES	GVPDRFTGSGSGTDFTLTISSVKAEDLAVYYC	QQYYSYWT	FGGGTKLEIK	238
SC37.239	DIVMSQSPSSLAVSVGEKVTMSC	KSSQSLLYSTNQKNYLA	WYQQKPGQSPKLLIY	WASTRES	GVPDRFTGSGSGTDFTLTISSVKAEDLAVYYC	QQYYNYLT	FGAGTKLELK	242
SC37.243	DVLMTQTPLSLPVSLGDQASISC	RSSQSIVHSNGNTYLE	WYLQKPGQSPKLLIY	KVSNRFS	GVPDRFSGSGSGTDFTLTISRVEAEDLGVYYC	FQGSHVPLT	FGAGTKLELK	246
SC37.244	DVLMTQTPLSLPVSLGDQASISC	RSSQSIVHSNGNTYLE	WYLQKPGQSPKLLIY	KVSNRFS	GVPDRFSGSGSGTDFTLKISRVEAEDLGVYYC	FQGSHVPWT	FGGGTKLEIK	250

FIG. 7A Cont.

Anti-RNF43 Humanized Amino Acid Variable Region Light Chain Sequences

Name	FR1	CDRL1	FR2	CDRL2	FR3	CDRL3	FR4	SEQ ID NO
hSC37.2	DIQMTQSPSSLSASVGDRVTITC	KSSQTLLYYSNQKNYLA	WYQQKPGKVPKLLIY	WASTRDS	GVPSRFSGSGSGTDFTLTISSLQPEDVATYYC	QQYYNYPLT	FGQGTKLEIK	254
hSC37.17	DIVMTQSPDSLAVSLGERATINC	RASESVDSYGNSFMH	WYQQKPGQPPKLLIY	LASNLES	GVPDRFSGSGSGTDFTLTISSLQAEDVAVYYC	QQNNEDPLT	FGQGTKVEIK	258
hSC37.39	EIVMTQSPATLSVSPGERATLSC	KASQNVGINVA	WYQQKPGQAPRALIY	SASYRYS	GIPARFSGSGSGTEFTLTISSLQSEDFAVYYC	HQYKTYPYT	FGGGTKVEIK	262
hSC37.67	DIQMTQSPSSLSASVGDRVTITC	KASEDIYNRLA	WYQQKPGKAPKLLIS	GATSLET	GVPSRFSGSGSGTDYTLTISSLQPEDFATYYC	QQNWSTPPT	FGGGTKVEIK	266
hSC37.67 variant 1	DIQMTQSPSSLSASVGDRVTITC	KASEDIYNRLA	WYQQKPGKAPKLLIS	GATSLET	GVPSRFSGSGSGTDYTLTISSLQPEDFATYYC	QQQWSTPPT	FGGGTKVEIK	270

FIG. 7A Cont.

Anti-RNF43 Mouse Antibody Amino Acid Variable Region Heavy Chain Sequences

Name	FR1	CDRH1	FR2	CDRH2	FR3	CDRH3	FR4	SEQ ID NO
SC37.1	QVQLQQPGAELVRPGASVKLSCKVSGYTFA	SYWMN	WVKQRPGQGLEWIA	MIDYSDSETHYNQMFKD	KATLTVDKSSNTAYMQLSSLTSEDSAVYYCAR	EGNYGNPSYFDF	WGQGTTLTVSS	24
SC37.2	EVNLVESGGGLVQPGGSLRLSCATSGFTFS	DFDME	WVRQPPGKRLEWIA	ASRNKANDYTTQYSASVKG	RFIVSRDTSQSIVYIQMNALRAEDTAIYYCAR	DRYDYALDY	WGQGTSVTVSS	28
SC37.3	QIQLVQSGPELKKPGETVKISCKASGYTFT	NYGMN	WVRQAPGKGLKWVG	WINTNTGEPTYADDFKG	RFAFSLETSASTAYLQISNLKNEDMSTYFCAG	SHDYSFAY	WGQGTLVTVSA	32
SC37.4	QVTLKESGPGILQPSQTLSLTCSFSGFSLS	TSGMGVG	WIRQPSGKGLEWLA	HIWWDDDKRYKAALKS	RLTISKDTSSKRVFLKIASVDTADTATYFCAR	IGGYNGGRFYYYAMDN	WGQGTSVTVSS	36
SC37.6	QIQLVQSGPEMKKPGETVKISCKASGYTFT	NYGLN	WVRQAPGKGLKWMG	WINTNTGEPTYGDDFKG	RFAFSLETSASTAYLQINNLKNEDTTTYFCAR	SYDYSFAY	WGQGTLVTVSA	40
SC37.7	DVQLQESGPGLVKPSQSLSLTCTVTAYSVT	SDYAWN	WIRQFPGNTLEWMG	YITYSGSTVYNPSLKS	RISITRDTSKNQFFLQLNSVTAEDTATYYCAR	SEVGRGGYSMEY	WGQGTSVTVSS	44
SC37.8	QIQLVQSGPELKKPGETVKISCKASGYTFT	NYGMN	WVKQAPGKVLKWMG	WINTHTGEPTYADDFKG	RFAFSLETSASTAYLQINNLKNEDMATYFCAG	SYDYSFAY	WGQGTLVTVSA	48
SC37.9	QIQLVQSGPELKKPGETVKISCKAPGYTFR	NYGLN	WVKQAPGKGLKWMG	WINTNTGEPTYADDFKG	RFAFSLDTSASTAYLQINNLKNEDMATYFCAR	SHDFSFVY	WGQGTLVTVSA	52
SC37.10	QIQLVQSGPELKKPGETVDISCKASGYTFT	NYGMN	WVKQAPGKGLKWMG	WINTHTGEPTYSDDFKG	RFAFSLETSASTAYLQINNLENEDMATYFCAG	SYDYSFAY	WGQGTLVTVSA	56
SC37.11	QVQLKESGPGLVAPSQSLSITCTVSGFSLT	SYGVH	WVRQPPGKGLEWLG	LIWAGGSTYYNSALMS	RLTIRKDNSRSQVFLKMNSLQTDDTAMYYCAR	DDYGKSAY	WGQGTLVTVSA	60
SC37.12	QVTLKESGPGILKPSQTLSLTCSFSGFSLS	TPGMGIG	WIRQPSGKGLEWLA	HIWWDDDKYYNPSLKS	QLTISKDTSGNQVFLKITSVDTAETSTYYCAR	RADYGSSPWYFDV	WGAGTTVTVSS	64
SC37.13	QVQLKESGPGLVAPSQTLSITCTVSGFSLT	NYGVH	WVRQPPGKGLEWLG	LIWADENTNYNSALMS	RLSISKDNSKSQVFLKMNSLQTDDTAMYYCAR	RGRYDDGPGAMDY	WGQGTSVTVSS	68

FIG. 7B

Anti-RNF43 Mouse Antibody Amino Acid Variable Region Heavy Chain Sequences

Name	FR1	CDRH1	FR2	CDRH2	FR3	CDRH3	FR4	SEQ ID NO
SC37.15	EVQLQQFGTELVKPGTSVKISCKASGYTFT	DYNMD	WVKQSHGKSLEWIG	DFNPSYDSTTYNQKFKG	KATLTVDKSSSTAYMELRSLTSEDTAVYYCAS	GRAMDY	WGQGTSVTVSS	72
SC37.16	QVQLQQSGAELMKPGASVKISCKATGYKFS	RYWIE	WVKQRPGHGLEWIG	EMVPGTGSIKYNEKFKG	KATITADTSSTTAYMQLSSLTSEDSGVYYCAR	SGHYYAYFDY	WGQGSTLTVSS	76
SC37.17	EVQLQQSGADLVKPGASVKLSCTGSGFNIK	DTYIH	WVRQRPEQGLEWIG	RIDPANGKANYDPKFQG	KATMTADTSSKTVYVQLSSLTSEDTAVYYCAL	GGGYYGMDY	WGRGTSVTVSS	80
SC37.19	QIQLVQSGPELKKPGETVKISCKASGYIFT	NYGMN	WVKQAPGKGLKWMG	WINTHTGEPTYSDDFKG	RFALSLETSASTAFLQINNLKNEDTATYFCAG	SYDYSFTY	WGQGTLVTVSA	84
SC37.20	QIQLVQSGPELKKPGETVKISCKASGYTFT	NYGMN	WVKQAPGKGLKWMG	WINTDTGEATYGDDFKG	RFAFSLETSASTAFLQIKNLKNEDTATYFCAG	SYDYSFAY	WGQGTLVTVSE	88
SC37.21	EVRLQQSGADLVKPGASVKLSCTGSGFNIK	DTYIH	WVRQRPEQGLEWIG	RIDPANGKANYDPKFQG	KATMTADTSSKTVYVQLSSLTSEDTAVYYCAL	GGGYYGMDY	WGRGTSVTVSS	90
SC37.22	QIQLVQSGPELKKPGETVKISCKAPGYTFR	NYGLN	WVKQAPGKGLKWMG	WINTNTGEPTYTDDFKG	RFAFSLDTSASTAYLQINNLKNEDMATYFCAR	SHDFSFVY	WGQGTLVTVSA	94
SC37.23	QVQLQQSGTELMKPGASVKISCKATGYTFS	SYWIE	WVKQRPGHGLEWIG	EILPGSGSTNYNEKFKG	KATFTVDTSSNTAYMQLSSLTSEDSAVYYCAR	IIRDF	WGQGTTLTVSS	98
SC37.28	QVQLQQSGTELMKPGASVKISCKATGYTFS	AYWIE	WVKQRPGHGLEWIG	EILPGSGSTNCNEKFRA	KATFTADTSSNTAYMQLSSLTSEDSAVYYCAR	ILRDL	WGQGTTLTVSS	100
SC37.29	QIQLVQSGPELKKPGETVKISCKASGYTFT	NYGMN	WVKQAPGKGLKWMG	WVNTHTGEPTYGDDFKG	RFAFSLETSASTAYLQINSLKNEDMATYFCAG	SYDYSFAY	WGQGTLVTVSA	104
SC37.37	QVQLQQSAAELARPGASVKMSCEASGYTFT	SYTIH	WIKQRPGQGLEWIG	YINPNNGYTEYNQKFKD	KTTVTVDKSSSTAHMQLSSLTSEDSAVYYCAR	GLSY	WGQGTLVTVSA	108
SC37.39	QVQLQQSAAELARPGASVKMSCKASGYTFT	TYTIH	WVKQRPGQGLKWIG	YINPRSGYTEYNQKFQD	KTTMTSDNSSSTAYIQLSSLTSEDSAVYYCAR	SYEF	WGQGTTLTVSS	112

FIG. 7B Cont.

Anti-RNF43 Mouse Antibody Amino Acid Variable Region Heavy Chain Sequences

Name	FR1	CDRH1	FR2	CDRH2	FR3	CDRH3	FR4	SEQ ID NO
SC37.40	EVQLQQSGADLVKPGASVKLSCTGSGFNIK	DTYIH	WVRQRPEQGLEWIG	RIDPANGKANYDPKFQG	KATITADTSSKTAYVQLSSLTSEDTAVYYCAL	GGGYYGMDY	WGRGTSVTVSS	116
SC37.41	EVQLQQSGAEFVKPGASVKLSCTASGFNIK	DTYMH	WVKQRPEQGLEWIG	RIDPANGNSKYNPKFQA	KATITTDTSSNTAYLQLSSLTSEDTAVYFCTP	PTGPYYGMDY	WGQGTSVTVSS	120
SC37.45	QVQLQQSGAELMKPGASVKISCKATGYTFS	RYWIE	WVKQRPGHGLEWIG	EILPGSGSTNYNEKFKG	KATFTADTSSNTAYMQLTSLTSEDSAVYFCER	RGAY	WGQGTLVTVSA	126
SC37.47	EVQLQQSGAELVKPGASVKLSCTASGFNIK	DTYMH	WVKQRPEQGLEWIG	RIDPANGNTKYDPKFQG	KATITADTSSNTAYLQLSSLTSEDTAVYYCAT	GGGYYAMDY	WGQGTSVTVSS	130
SC37.48	QVQLQQSGAELARPGASVKMSCKASGYTFT	SYTIH	WVKQRPGQGLEWLG	YINPRSNYTNYNQRFKD	KATLTADKSSSTAYMQLSSLTSEDSAVYYCTR	WGEDF	WGQGTTLTVSS	134
SC37.51	QIQLVQSGPELKKPGETVKISCKASGYTFT	NYGMN	WVKQAPGKGLKWMG	WINTHTGEPTYADDFKG	RFAFSLDTSANTAYLQINNLRNEDMATYFCAG	SYDYSFAY	WGQGTLVTVSA	138
SC37.72	QIQLVQSGPELKKPGETVKISCKAPGDTFR	NYGLN	WVKQAPGKGLKWMG	WINTNTGEPTYDDDFKG	RFAFSLETSATTAYLQINNFKNEDMATYFCAR	SHDFSFVY	WGQGTLVTVSA	142
SC37.77	QVQLQQSGAELARPGASVKMSCKASGYTFT	SYTIH	WVKQRPGQGLEWIG	YINPRNNYTNYNQNFKD	KATLTVDKSSSTAYMQLSSLTSEDSAVYYCAR	WGEDY	WGQGSTLTVSS	148
SC37.108	QVQLQQPGAELVKPGASVKLSCKASGYTFT	SYYIY	WVKQRPGQGLDWIG	GINPRNGGTNFNEKFKS	KATLTVDKSSSTAYMQLSSLTSEDSAVYYCTR	SWTY	WGQGTLVTVSA	152
SC37.122	QVQLQQSGAELVRPGASVTLSCKASGYTFT	DYEMH	WVKQTPVHGLEWIG	AIDPETGGTAYNQKFKG	KATLTADKSSSTAYMELSSLTSEDSAVYYCTR	TGFAY	WGQGTLVTVSA	156
SC37.136	EVQLQQSGAELVRPGASVKLSCTASGFNIE	ADYMH	WVKQRPEQGLEWIG	WIDPEIGSTEYASKFQG	KATITADTSSNTAYLQLSSLTSEDTAVYYCIT	DGNYVKGY	WGQGTTLTVSS	162
SC37.141	QVQLQQPGAELVRPGASVKLSCKASGYTFT	SYWMN	WVKQRPGQGLEWIG	MIDPSDSETHYSQMFKD	KATLTVDQSSNTAYMHLSSLTSEDSAVYYCAR	EGYYFDGTRGIAY	WGQGTLVTVSV	166

FIG. 7B Cont.

Anti-RNF43 Mouse Antibody Amino Acid Variable Region Heavy Chain Sequences

Name	FR1	CDRH1	FR2	CDRH2	FR3	CDRH3	FR4	SEQ ID NO
SC37.150	QIQLVQSGPELKKPGETVKISCKASGYTFT	NYPIH	WVKQAPGKGLKWMG	WINTYSGVPTYADDFKG	RFAFSLETSASTAYLQINNLKNEDMATYFCEG	GGIYYNNYGYVMDY	WGQGTSVTVSS	170
SC37.160	QVQLQRSGAELARPGASVKLSCKASGYTFT	SYGIS	WVKQRTGQGLEWIG	EIFPGSGNTYYNEMFKG	KATLTADKSSSTAYMELRSLTSEDSAVYFCAR	GDYYGSSSFDY	WGQGTTLTVSS	174
SC37.163	QVQLQQSGAELVRPGASVTLSCKASGYTFT	DYEMH	WLKQTPVHGLEWIG	AIDPETGGTAYNQKFKG	KATLTADKSSSTASMELSSLTSEDSAVYYCTR	TGFVY	WGQGTLITVSA	178
SC37.169	QVQLQQSGAEVMKPGASVKLSCKATGYTFT	GYWIE	WVKERPGHGLEWIG	EILPGSGSTNYNEKFKG	KATFTADPSSNTAYMQLSSLTTEDSAIYYCAR	DYGSFGY	WGQGTLVTVSA	182
SC37.170	QVQLQQPGSMLVRPGASVKLSCKASGYTFT	HYWMH	WVKQRPGQGLEWIG	EIYPNSGRTNYNEKFKG	KATLTVDTSSSTAYVDLSSLTSADSAVYYCAR	GYDPFDY	WGQGTTLTVSS	186
SC37.172	EVQLQQSGAELVRPGASVKLSCTASGFNIE	ADYMH	WVKQSPEQGLEWIG	WIDPEIGATEYASKFQG	KATMTADTSSNTAYLQLSSLTSEDTAVYYCIT	DGNYVKGY	WGQGTTLTVSS	188
SC37.177	QVSLIESGPGIMQPSQTLSLTCSFSGFSLS	ASDMGVG	WIRQPSGKGLEWLA	NIWWDDSKYYNAALKT	RLTISKDTSKNQVFLKIASVDTADTATYYCAR	ISRAYYGHWFAY	WGQGTLVTVSA	192
SC37.185	QVQLQQPGAELVRPGSSVKLSCKASGYTFT	SYWMD	WVKQRPGQGLEWIG	NIYPSDGETHYNQKFKD	KATLTVDRLSSTAYMQLSSLTSEDSAVYYCAR	HYYAGSPYYFDY	WGQGTTLTVSS	196
SC37.191	QVQLQQPGSVLVRPGASVKLSCKASGYTFT	NYWLH	WVKQRPGQGLEWIG	EIYPNSGRTNYNEKFKD	KATLTGDTSSNTAYVDLISLTSEDSAVYYCAV	ATPPDY	WGQGTTLTVSS	200
SC37.193	EVQLQQSGAELVRPGASVKLSCTASGFNIK	DDYMH	WMKQRPEQGLEWLG	WIDPEIGATEYASKFQG	KATMTADTSSNTAYLQLSSLTSEDTAVYYCVD	DRRGMDY	WGQGTSVTVSS	204
SC37.196	EVQLQQSGTELVRPGASVKLSCTASGFNIE	ADYLH	WVKQRPEQGLEWIG	WIDPEIGSTEYASKFRG	KASITADTSSNTAYLQLNSLTSEDTAVYYCAI	DGTMDY	WGQGTSVTVSS	208
SC37.202	QVSLKESGPGILQPSQTLSLTCSFSGFSLS	TSGMAVG	WIRQPSGRGLEWLA	NIWWDDSQHYNAALKS	RLTISKDTSKNQVFLKIASVDTADTATYYCAR	SNWGRYFDY	WGQGTTLTVSS	212

FIG. 7B Cont.

Anti-RNF43 Mouse Antibody Amino Acid Variable Region Heavy Chain Sequences

Name	FR1	CDRH1	FR2	CDRH2	FR3	CDRH3	FR4	SEQ ID NO
SC37.212	EVQLQQSGAELVRPGASVKLSCTASGFNIE	VDYMH	WVKQRPEQGLEWIG	WIDPEIGGTEYASKFQG	KATITADTSSNTVYLHLSSLTPEDTAVYYCTT	DGNYVKGY	WGQGTTLTVSS	216
SC37.217	EIQLQQSGAELVRPGASVKLSCTASGFNIQ	ADYMH	WVKQRPEQGLEWIG	WIDPEIGGTEYASKFQG	KATITADTSSNTVYLQLSSLTSEDTAVYYCIT	DGNYVKGY	WGQGTTLTVSS	218
SC37.223	QVQLQQPGAELVKPGASVKLSCKASGYTFT	TYYIY	WVKQRPGQGLEWIG	GINPRNGGTNFNEKFKT	RATLTVDKSSSTAYMQLSSLTSEDSAVYYCTR	TFY	WGQGTTLTVSS	222
SC37.226	EVQLQQSGAELVRPGASVKLSCTASGFNII	VDYLH	WVRQRPEQGLEWIG	WIDPEIGSTEYASKFQG	KATMTADTSSNTAYLQLSSLTSEDTAVYYCII	DGTMDY	WGQGTSVTVSS	226
SC37.231	EVQLQQSGAELVRPGASVKLSCTASGFNIK	DDYIH	WVKQRPEQGLEWIG	WIDPENGDTKYASKFPG	KATMTADTSSNTAYLQLSSLTSEDTAVYYCTA	SRTTALDY	WGPGTTLTVSS	230
SC37.232	EVQLQQSGAELVRPGASVKLSCTASGFNIE	ADYMH	WVKQSPEQGLEWIG	WIDPEIGATEYASKFQG	KATMTADTSSNTAYLQLSSLTSEDTGVYYCIT	DGNYVKGY	WGQGTTLTVSS	232
SC37.233	QVQLQQPGAELVKPGASVKLSCKASGYTFT	TYYIY	WVKQRPGQGLEWIG	GINPRNGGTNFNEKFMS	RATLTVDKSSSTAYMQLSSLTSEDSAVYYCSR	SFY	WGQGTTLIVSS	236
SC37.236	QVQLQQPGAELVRPGSSVKLSCKASGYTFT	TYWMD	WVKQRPGQGLEWIG	NIYPSDSETHYNPKFKD	KATLTVDISSSTAYMQLSSLTSEDSAVYYCAR	HYYAGSPFYFDY	WGQGTSLTVSS	240
SC37.239	QVSLKESGPGILQPSQTLSLTCSFSGFSLS	SSGMAVG	WIRQPSGKGLEWLA	NIWWDDDKHYNAALKS	RLTISKDTSKNQVFLKIASVDTADTATYYCAR	TGDLRAYFDY	WGQGTTLTVSS	244
SC37.243	DVQLQESGPDLVKPSQSLSLTCTVTGYSIT	SGLGWH	WIRQFPGYKLEWMG	YISYSGSNNYNPSLKS	RISITRDTSKNQFFLQLNSVTNEDTATYYCAS	HGDGV	WGAGTTVTVSS	248
SC37.244	QVQLQQSGAELARPGASVKLSCKASGYTFT	SYGIS	WVKQRTGQGLEWIG	EIFPRTGNTYYNEKFKG	KATLTADKSSSTAYMELRSLTSEDSAVYFCAR	GDYYGSSSFDY	WGQGTTLTVSS	252

FIG. 7B Cont.

Anti-RNF43 Humanized Antibody Amino Acid Variable Region Heavy Chain Sequences

Name	FR1	CDRH1	FR2	CDRH2	FR3	CDRH3	FR4	SEQ ID NO
hSC37.2	EVQLVESGGGLVQPGGSLRLSCAASGFTFS	DFDME	WVRQAPGKGLEWVG	ASRNKANDYTTQYSASVKG	RFTISRDTSKNSLYLQMNSLKTEDTAVYYCAR	DRYDYALDY	WGQGTTVTVSS	256
hSC37.17	QVQLVQSGAEVKKPGASVKVSCKASGFNIK	DTYIH	WVRQAPGQGLEWMG	RIDPANGKANYDPKFQG	RVTMTRDTSTSTVYMELSSLRSEDTAVYYCAL	GGGYYGMDY	WGQGTLVTVSS	260
hSC37.39	QVQLVQSGAEVKKPGASVKVSCKASGYTFT	TYTIH	WVRQAPGQGLEWMG	YINPRSGYTEYNQKFQD	RVTMTRDTSTSTVYMELSSLRSEDTAVYYCAR	SYEF	WGQGTTVTVSS	264
hSC37.67	QVQLVQSGAEVKKPGASVKVSCKASGYTFT	RYWIE	WVRQAPGQRLEWMG	EILPGSGSTNYNEKFKG	RVTITADTSASTAYMELSSLRSEDTAVYYCER	RGAY	WGQGTLVTVSS	268

FIG. 7B Cont.

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Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.1	Light Chain	GACATTGTGATGTCACAGTCTCCATCCTCCCTACCTGTGTCAGTTGGAGAGAGGGTTACTATGAGCTGCAAGTCCAGTCAGAGCCTTTTATATAGTACCAATCAAAAAAACTACTTGGCCTGGTACCAGCAGAAACCAGGGCAGTCTCCTAAACTGCTGATTTACTGGGCATCCACTAGGGAATCTGGGGTCCCTGATCGCTTCACAGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCGGTGTGAAGGCTGAAGACCTGGCAGTTTATTACTGTCAGCAATATTATAACTATCCTCGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	21
SC37.1	Heavy Chain	CAGGTCCAGTTGCAGCAGCCTGGGGCGGAGCTGGTGAGGCCTGGGGCTTCAGTGAAGCTGTCCTGCAAGGTTTCTGGCTACACCTTCGCCAGCTACTGGATGAACTGGGTGAAGCAGAGGCCTGGACAAGGCCTTGAATGGATTGCTATGATTGATTATTCAGACAGTGAAACTCACTACAATCAAATGTTCAAGGACAAGGCCACATTGACTGTAGACAAATCCTCCAACACAGCCTACATGCAGCTCAGCAGCCTGACATCTGAGGACTCTGCGGTCTATTACTGTGCAAGAGAGGGTAACTACGGTAACCCCTCCTACTTTGACTTCTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	23
SC37.2	Light Chain	GACATTGTGATGTCACAGTCTCCATCCTCCCTAGCTGTGTCAGTTGGAGAGAAGGTTACTATGAGCTGCAAGTCCAGTCAGACCCTTTTATATTATAGCAATCAAAAGAACTACTTGGCCTGGTACCAGCGGAAACCAGGGCTGTCTCCTAAACTGCTGATTTACTGGGCATCCACTAGGGATTCTGGGGTCCCTGATCGCTTCACAGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAGTGTGAAGGCTGAAGACCTGGCAGTTTATTACTGTCAGCAATATTATAACTATCCGCTCACGTTCGGTGCTGGGACCAAGCTGGAGCTGAAA	25
SC37.2	Heavy Chain	GAGGTGAATCTGGTGGAATCTGGAGGAGGCTTGGTACAGCCTGGGGGTTCTCTGAGACTCTCCTGTGCAACTTCTGGGTTCACCTTCAGTGATTTCGACATGGAGTGGGTCCGCCAGCCTCCAGGGAAGAGACTGGAGTGGATTGCTGCAAGTAGAAACAAAGCTAATGATTATACAACACAATACAGTGCTTCTGTGAAGGGTCGGTTCATCGTCTCCAGAGACACTTCCCAAAGCATCGTCTACATTCAGATGAATGCCCTGAGAGCTGAGGACACTGCCATTTATTACTGTGCAAGAGATAGGTACGACTATGCTTTGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA	27
SC37.3	Light Chain	CAGGCTGTTGTGACTCAGGAATCTGCACTCACCACATCACCTGGTGAAACAGTCACATTCACTTGTCGCTCAAGTACTGGGGCTGTTACAACTTCTAACTATGCCAACTGGGTCCAAGAAAAACCAGATCATTTATTCACTGGTCTAATAGGTGGTACCAACAACCGAGCTCCAGGTGTTCCTGCCAGATTCTCAGGCTCCCTGATTGGAGACAAGGCTGCCCTCACCATCACAGGGGCACAGACTGAGGATGAGGCAATATATTTCTGTGCTCTATGGTACAGCAATCATTGGGTGTTCGGTGGAGGAACCAAACTGACTGTCCTA	29
SC37.3	Heavy Chain	CAGATCCAGTTGGTTCAGTCTGGACCTGAGCTGAAGAAGCCTGGAGAGACAGTCAAGATCTCCTGCAAGGCTTCTGGGTATACCTTCACAAACTATGGAATGAACTGGGTGAGGCAGGCTCCAGGAAAGGGTTTAAAGTGGGTGGGCTGGATAAACACCAACACTGGAGAGCCAACATATGCTGATGACTTCAAGGGACGGTTTGCCTTCTCTTTGGAAACCTCTGCCAGCACTGCCTATTTGCAGATCAGCAACCTCAAAAATGAGGACATGTCTACATATTTCTGTGCAGGATCTCATGATTACTCCTTTGCTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	31

FIG. 7C

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.4	Light Chain	GATATCCAGATGACACAAACTACATCCTCCCTGTCTGCCTCTCTGGGAGACAGAGTCACCATCAGTTGCAGGGCAAGTCAGGACATTAGCAATTATTTAAACTGGTATCAGCAGAAACCAGATGGAACTGTTAAACTCCTGATCTACTACACATCAAGATTACACTCAGGAGTCCCATCAAGGTTCAGTGGCAGTGGGTCTGGAACAGATTATTCTCTCACCATTAGCAACCTGGAACAAGATGATATTGCCACTTACTTTTGCCAACAGGGTAATACGCTTTACACGTTCGGAGGGGGGACCAAGCTGGAAATAAAA	33
SC37.4	Heavy Chain	CAGGTTACTCTGAAAGAGTCTGGCCCTGGGATATTGCAGCCCTCCCAGACCCTCAGTCTGACTTGTTCTTTCTCTGGGTTTTCACTGAGCACTTCTGGTATGGGTGTAGGCTGGATTCGTCAGCCTTCAGGGAAGGGTCTGGAGTGGCTGGCACACATTTGGTGGGATGATGACAAGCGCTATAAAGCAGCCCTGAAGAGCCGACTGACAATATCCAAGGACACCTCCAGCAAGCGGGTATTCCTCAAGATCGCCAGTGTGGACACTGCAGATACTGCCACATACTTCTGTGCTCGAATAGGAGGTTACAACGGTGGTAGGTTCTATTACTATGCCATGGACAACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA	35
SC37.6	Light Chain	CAGGCTGTTGTGACTCAGGAATCTGCACTCACCACATCACCTGGTGAAACAGTCACACTCACTTGTCGCTCAAGTACTGGGGCTGTTACAACTAGTAACTATGCCAACTGGGTCCAAGAAAAACCAGATCATTTATTCACTGGTCTAATAGGTGGTACCAACAACCGAGCTCCAGGTGTTCCTGCCAGATTCTCAGGCTCCCTGATTGGAGACAAGGCTGCCCTCACCATCACAGGGGCACAGACTGAGGATGAGGCAATATATTTCTGTGTTCTATGGTACAGCAACCATTGGGTGTTCGGTGGAGGAACCAAACTGACTGTCCTA	37
SC37.6	Heavy Chain	CAGATCCAGTTGGTGCAGTCTGGACCTGAGATGAAGAAGCCTGGAGAGACAGTCAAGATCTCCTGCAAGGCTTCTGGGTATACCTTCACAAACTATGGATTGAACTGGGTGAGGCAGGCTCCAGGAAAGGGTTTAAAGTGGATGGGCTGGATAAACACCAACACTGGAGAGCCAACATATGGTGATGACTTCAAGGGACGGTTTGCCTTCTCATTGGAAACCTCTGCCAGCACTGCCTATTTACAGATCAACAACCTCAAAAATGAGGACACGACAACATATTTCTGTGCAAGATCCTATGATTACTCGTTTGCTTATTGGGGCCAAGGGACTTTGGTCACTGTCTCTGCA	39
SC37.7	Light Chain	GACATTGTGATGACCCAGTCTCACAAATTCATGTCCACATCAGCAGGAGACAGGGTCAGCATCACCTGCAAGGCCAGTCAGGATGTGGGTACTGCTGTAGCCTGGTATCAACAGAAACCAGGGCAATCTCCTAAAATACTGATTTACTGGGCATCCACCCGGCACACTGGAGTCCCTGATCGCTTCACAGGCAGTGGATCTGGGACAGATTTCACTCTCACCATTAGCAATGTGCAGTCTGAAGACTTGGCAGATTATTTCTGTCAGCAATATAGCAGCTATCCTCTCACGTTCGGTGCTGGGACCAAGCTGGAGCTGAAA	41
SC37.7	Heavy Chain	GATGTGCAGCTTCAGGAGTCGGGACCTGGCCTGGTGAAACCTTCTCAGTCTCTGTCCCTCACCTGCACTGTCACTGCCTACTCTGTCACCAGTGATTATGCCTGGAACTGGATCCGGCAGTTTCCAGGAAACACACTGGAGTGGATGGGCTACATAACCTACAGTGGTAGCACTGTCTACAACCCCTCTCTCAAAAGTCGAATCTCTATCACTCGAGACACATCCAAGAACCAGTTCTTCCTGCAGTTGAATTCTGTGACTGCTGAGGACACAGCCACATATTACTGTGCAAGATCTGAAGTGGGACGAGGGGGCTATTCTATGGAGTACTGGGGTCAGGGAACCTCAGTCACCGTCTCCTCA	43

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.8	Light Chain	CAGGCTGTTGTGACTCAGGAATCTGCACTCACCACATCACCTGGTGAAACAGTCACACTCACTTGTCGCTCAAGTACTGGGGCTGTTACAACTAGTAACTATGCCAACTGGGTCCAAGAAAAACC AGATCATTTATTCACTGGTCTAATAGGTGGTACCAACAACCGAGCTCCAGGTGTTCCTGCCAGATTCTCAGGCTCCCTGATTGGAGACAGGGCTGCCCTCACCATCACAGGGGCACAGACTGAGG ATGAGACAATATATTTCTGTGCTCTATGGCTCAGCAACCATTGGGTGTTCGGTGGTGGAACCAAACTGACTGTCCTA	45
SC37.8	Heavy Chain	CAGATCCAGTTGGTGCAGTCTGGACCTGAGCTGAAGAAGCCTGGAGAGACAGTCAAGATCTCCTGCAAGGCTTCTGGGTATACCTTCACAAACTATGGAATGAACTGGGTGAAGCAGGCTCCAGG AAAGGTTTTAAAGTGGATGGGCTGGATAAACACCCACACTGGAGAGCCAACATATGCTGATGACTTCAAGGGACGGTTTGCCTTCTCTTTGGAAACCTCTGCCAGCACTGCCTATTTGCAGATCA ACAACCTCAAAAATGAGGACATGGCTACATATTTCTGTGCAGGATCTTATGATTACTCCTTTGCTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	47
SC37.9	Light Chain	CAGGCTGTTGTGACTCAGGAATCTGCACTCACCACATCACCTGGTGAAACAGTCACACTCACTTGTCGCTCAACTACTGGGGCTGTTACAACTAGTAACTATGCCAACTGGGTCCAAGAAAAACC AGATCATTTATTCACTGGTCTAATGGGTGGTACCAACAACCGAGCTCCAGGTGTTCCTGCCAGATTCTCAGGCTCCCTGATTGGAGACAAGGCTGCCCTCACCATCACAGGGGCACAGACTGAGG ATGAGGCAATATATTTCTGTGCTCTATGGTACAGCAACCATTGGGTGTTCGGTGGAGGAACCAAACTGACTGTCCTA	49
SC37.9	Heavy Chain	CAGATCCAGTTGGTGCAGTCTGGACCTGAGCTGAAGAAGCCTGGAGAGACAGTCAAGATCTCCTGCAAGGCTCCTGGGTATACCTTCAGAAACTATGGATTGAACTGGGTGAAGCAGGCTCCAGG AAAGGGTTTAAAGTGGATGGGCTGGATAAACACTAACACTGGAGAGCCAACATATGCTGATGACTTCAAGGGACGGTTTGCCTTCTCTTTGGATACCTCTGCCAGCACTGCCTATTTGCAGATCA ATAACCTCAAAAATGAGGACATGGCAACATATTTCTGTGCAAGATCTCATGATTTCTCCTTTGTTTATTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	51
SC37.10	Light Chain	CAGGCTGTTGTGACTCAGGAATCTGCACTCACCACATCACCTGGTGAAACAGTCACACTCACTTGTCGCTCAAGTACTGGGGCTGTTACAACTAGTAACTATGCCAACTGGGTCCAAGAAAAACC AGATCATTTATTCACTGGTCTAATAGGTGGTACCGACAACCGAGCTCCAGGTGTTCCTGCCAGATTCTCAGGCTCCCTGATTGGAGACAGGGCTGCCCTCACCATCACAGGGGCACAGACTGAGG ATGCGGCAATATATTTCTGTGCTCTATGGTCCAGCAACCATTGGGTGTTCGGTGGAGGAACCAAACTGACTGTCCTA	53
SC37.10	Heavy Chain	CAGATCCAGTTGGTGCAGTCTGGACCTGAGCTGAAGAAGCCTGGAGAGACAGTCGATATCTCCTGCAAGGCCTCTGGGTATACCTTCACAAACTATGGCATGAACTGGGTGAAGCAGGCTCCAGG AAAGGGTTTAAAGTGGATGGGCTGGATAAACACCCACACTGGAGAGCCAACATATAGTGATGATTTCAAGGGACGGTTTGCCTTCTCTTTGGAAACCTCTGCCAGCACTGCCTACTTGCAGATCA ACAACCTCGAAAATGAGGACATGGCTACATATTTCTGTGCAGGATCTTATGATTACTCCTTTGCTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	55

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.11	Light Chain	GAAAATGTGCTCACCCAGTCTCCAGCAATCATGTCTGCATCTCCAGGGGAAAAGGTCACCATGACCTGCAGGGCCAGCTCAAGTGTAAGATCCAGTTACTTTCACTGGTACCAGCAGAAGTCAGG TGCCTCCCCCAAACTCTGGATTTATAGCACATCCAACTTGGCTTCTGGAGTCCCTGCTCGCTTCAGTGGCAGTGGGTCTGGGACCTCTTACTCTCTCACAATCAGCAGTGTGGAGGCTGAAGATG CTGCCACTTATTACTGCCAGCAGTACAGTGGTTACCCACTCACGTTCGGCTCGGGGACAAAGTTGGAAATAAAA	57
SC37.11	Heavy Chain	CAGGTGCAGCTGAAGGAGTCAGGACCTGGCCTGGTGGCGCCCTCACAGAGCCTGTCCATCACTTGCACTGTCTCTGGGTTTTCATTAACCAGCTATGGTGTACACTGGGTTCGCCAGCCTCCAGG AAAGGGTCTGGAGTGGCTGGGACTAATATGGGCTGGTGGAAGCACTTATTATAATTCGGCTCTCATGTCCAGACTGACCATCAGAAAAGACAACTCCAGGAGCCAAGTTTTCTTAAAAATGAACA GTCTGCAAACTGATGACACAGCCATGTACTACTGTGCCAGAGATGACTATGGTAAATCTGCTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	59
SC37.12	Light Chain	GACATTGTGATGACACAGTCTCCATCCTCCCTGGCTATGTCAGTAGGACAGAAGGTCACTATGAGCTGCAAGTCCAGTCAGAGCCTTTTAAATAGTTACAGTCAAAAGAACTATTTGGCCTGGTA CCAGCAGAAACCAGGACAGTCTCCTAAACTTCTGATATACTTTGCATCCACTAGGGAATCTGGGGTCCCTGATCGCTTCATAGGCAGTGGATCTGGGACAGATTTCACTCTTACCATCAGCAGTG TGCAGGCTGAAGACCTGGCAGATTACTTCTGTCAGCAACATTATACCACTCCTCTCACGTTCGGTGCTGGGACCAAGCTGGAGCTGAAA	61
SC37.12	Heavy Chain	CAAGTTACTCTAAAAGAGTCTGGCCCTGGGATATTGAAGCCCTCACAGACCCTCAGTCTGACTTGTTCTTTCTCTGGGTTTTCACTGAGCACTCCTGGTATGGGTATAGGCTGGATTCGTCAGCC TTCAGGGAAGGGTCTGGAGTGGCTGGCACACATTTGGTGGGATGATGATAAGTACTATAACCCATCCCTGAAGAGCCAGCTCACAATCTCCAAGGATACCTCCGGAAACCAGGTATTCCTCAAGA TCACCAGTGTGGACACTGCAGAAACTTCCACTTACTACTGTGCTCGAAGAGCTGACTACGGTAGTAGCCCCTGGTACTTCGATGTCTGGGGCGCAGGGACCACGGTCACCGTCTCCTCA	63
SC37.13	Light Chain	GACATTGTGATGTCACAGTCTCCATCCTCCCTAGCTGTGTCAGTTGGAGAGAAGGTTTCTATGAGCTGCAAGTCCAGTCAGAGCCTTTTATATAGTAGCAATCAAAAGAACTACTTGGCCTGGTA CCAGCAGAAACCAGGGCAGTCTCCTAAACTGCTGATTTACTGGGCATCCACTAGGGAATCTGGGGTCCCTGATCGCTTCACAGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAGTG TGAAGGCTGAAGACCTGGCAGTTTATTACTGTCAGCAATATTATAACTATTGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	65
SC37.13	Heavy Chain	CAGGTGCAGCTGAAGGAGTCAGGACCTGGCCTGGTGGCGCCCTCACAGACCCTGTCCATCACTTGCACTGTCTCTGGGTTTTCATTAACCAACTATGGTGTACACTGGGTTCGCCAGCCTCCAGG AAAGGGTCTGGAGTGGCTGGGACTAATATGGGCTGATGAAAACACAAATTATAATTCGGCTCTCATGTCCAGACTGAGCATCAGCAAAGACAACTCCAAGAGCCAAGTTTTCTTAAAAATGAACA GTCTGCAAACTGATGACACAGCCATGTACTACTGTGCCAGAAGGGGGAGGTACGACGACGGGCCCGGGGCTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA	67

FIG. 7C Cont.

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Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.15	Light Chain	GACATTGTGCTCACCCAATCTCCAGCTTCTTTGGCTGTGTCTCTAGGGCAGAGAGCCACCATCTCCTGCAGAGCCAGTGAAAGTGTTGAATATTATGGCACAAGTTTAATGCAGTGGTACCAACA GAAACCAGGACAGCCACCCAAGCTCCTCATCTATGGTGCATCCAACGTAGAATCTGGGGTCCCTGCCAGGTTTAGTGGCAGTGGGTCTGGGACAGACTTCAGCCTCAACATCCATCCTGTGGAGG AGGATGATATTGCAATGTATATCTGTCAGCAAAGTAGGAAGGTTCCGTGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	69
SC37.15	Heavy Chain	GAGGTCCAGCTGCAACAGTTTGGAACTGAGCTGGTGAAGCCTGGGACTTCAGTGAAGATATCCTGCAAGGCTTCTGGCTACACATTCACTGACTACAACATGGACTGGGTGAAGCAGAGCCATGG AAAGAGCCTTGAGTGGATTGGAGATTTTAATCCTAGCTATGATAGTACTACCTACAACCAGAAGTTCAAGGGAAAGGCCACATTGACTGTTGACAAGTCCTCCAGCACAGCCTACATGGAGCTCC GCAGCCTGACATCTGAAGACACTGCAGTCTATTACTGTGCAAGTGGGCGTGCTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA	71
SC37.16	Light Chain	CAGGCTGTTGTGACTCAGGAATCTGCACTCACCACATCACCTGGTGAAACAGTCACACTCACTTGTCGCTCAAGTACTGGGGCTGTTACAACTAGTAACTATGCCAACTGGGTCCAAGAAAAACC AGATCATTTATTCACTGGTCTAATAGGTGGTACCAACAACCGAACTCCAGGTGTTCCTGCCAGATTCTCAGGCTCCCTGATTGGAGACAAGGCTGCCCTCACCATCACAGGGACACAGACTGAGG ATGAGGCAATATATTTCTGTGCTCTATGGTACAGCAACCATTGGGTGTTCGGTGGAGGAACCAAACTGACTGTCCTA	73
SC37.16	Heavy Chain	CAGGTTCAGCTGCAGCAGTCTGGAGCTGAGCTGATGAAGCCCGGGGCCTCAGTGAAGATATCCTGCAAGGCTACTGGCTACAAATTCAGTAGGTACTGGATAGAGTGGGTAAAGCAGAGGCCTGG ACATGGCCTTGAGTGGATTGGAGAGATGGTACCTGGAACTGGTAGTATTAAATACAATGAGAAGTTCAAGGGCAAGGCCACAATCACTGCAGATACATCCTCCACCACAGCCTACATGCAACTCA GTAGCCTGACATCTGAGGACTCTGGCGTCTATTACTGTGCAAGATCCGGCCATTACTACGCCTACTTTGACTACTGGGGCCAAGGCTCCACTCTCACAGTCTCCTCA	75
SC37.17	Light Chain	AACATTGTGCTGACCCAATCTCCAGCTTCTTTGGCTGTGTCTCTAGGGCAGAGGGCCACCATATCCTGCAGAGCCAGTGAAAGTGTTGATAGTTATGGCAATAGTTTTATGCACTGGTACCAGCA GAAACCAGGACAGCCACCCAAGCTCCTCATCTATCTTGCATCCAACCTAGAATCTGGGGTCCCTGCCAGGTTCAGTGGCAGTGGGTCTAGGACAGACTTCACCCTCACCATTGATCCTGTGGAGG CTGATGATGCTGCAACCTATTACTGTCAGCAAAATAATGAGGATCCGCTCACGTTCGGTGCTGGGACCAAGCTGGAGCTGAAA	77
SC37.17	Heavy Chain	GAGGTGCAGCTGCAGCAGTCTGGGGCAGACCTTGTGAAGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGGTTCTGGCTTCAACATTAAAGACACCTATATACACTGGGTGAGGCAGAGGCCTGA ACAGGGCCTGGAGTGGATTGGAAGGATTGATCCTGCGAATGGTAAGGCTAATTATGACCCGAAGTTCCAGGGCAAGGCCACAATGACAGCAGACACATCCTCCAAGACAGTCTACGTGCAGCTCA GCAGCCTGACATCTGAGGACACTGCCGTCTATTACTGTGCTCTTGGGGGCGGGTATTATGGTATGGACTATTGGGGTCGAGGAACCTCAGTCACCGTCTCCTCA	79

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.19	Light Chain	CAGGCTGTTGTGACTCAGGAATCTGCACTCACCACATCACCTGGTGAAACAGTCACACTCACTTGTCGCTCAAGTACTGGGGCTGTTACAACTAGTAACTATGCCAACTGGGTCCAAGAAAAACC AGATCATTTATTCACTGGTCTAATAGGTGGTACCAACAACCGAGCTCCAGGTGTTCCTGCCAGATTCTCAGGCTCCCTGATTGGAGACAAGGCTGCCCTCACCATCACAGGGGCACAGACTGAGG ATGAGGCGATATATTTCTGTGCTCTATGGTCCAACAACCATTGGGTGTTCGGTGGAGGAACCAAACTGACTGTCCTA	81
SC37.19	Heavy Chain	CAGATCCAGTTGGTGCAGTCTGGACCTGAGCTGAAGAAGCCTGGAGAGACAGTCAAGATCTCCTGCAAGGCTTCTGGGTATATCTTCACAAACTATGGAATGAACTGGGTGAAGCAGGCTCCAGG AAAGGGTCTGAAGTGGATGGGCTGGATAAACACCCACACTGGAGAGCCAACATATAGTGATGACTTCAAGGGACGGTTTGCCTTGTCTTTGGAAACCTCAGCCAGCACTGCCTTTTTGCAGATCA ACAACCTCAAAAATGAGGACACGGCTACATATTTCTGTGCAGGATCCTATGATTACTCGTTTACTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	83
SC37.20	Light Chain	CAGGCTGTTGTGACCCAGGAATCTGCACTCACCACATCACCTGGTGAAACAGTCATACTCACTTGTCGTTCAAGTACTGGGGCTGTTACAACTAGTAACTATGCCAACTGGGTCCAAGAAAAACC AGATCATTTATTCACTGGTCTAATAGGTGGTACCAACAACCGAGCTCCAGGTGTTCCTGCCAGATTCTCAGGCTCCCTGATTGGAGACAAGGCTGCCCTCACCATCACAGGGGCACAGACTGAGG ATGAGGCAATATATTTCTGTGCTCTATGGTACAGCAACCATTGGGTGTTCGGTGGAGGAACCAAACTGACTGTCCTA	85
SC37.20	Heavy Chain	CAGATCCAGTTGGTGCAGTCTGGACCTGAGCTGAAGAAGCCTGGAGAGACAGTCAAGATCTCCTGCAAGGCTTCTGGTTATACCTTCACAAACTATGGAATGAACTGGGTGAAGCAGGCTCCAGG AAAGGGTTTAAAGTGGATGGGCTGGATAAACACCGACACTGGAGAGGCAACATATGGTGATGACTTCAAGGGACGGTTTGCCTTTTCTTTGGAAACCTCTGCCAGCACTGCCTTTTTGCAGATCA AAAACCTCAAAAATGAGGACACGGCTACATATTTCTGTGCAGGATCCTATGATTATTCGTTTGCTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGAA	87
SC37.21	Heavy Chain	GAGGTTCGGCTGCAGCAGTCTGGGGCAGACCTTGTGAAGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGGTTCTGGCTTCAACATTAAAGACACCTATATACACTGGGTGAGGCAGAGGCCTGA ACAGGGCCTGGAGTGGATTGGAAGGATTGATCCTGCGAATGGTAAGGCTAATTATGACCCGAAGTTCCAGGGCAAGGCCACAATGACAGCAGACACATCCTCCAAGACAGTCTACGTGCAGCTCA GCAGCCTGACATCTGAGGACACTGCCGTCTATTACTGTGCTCTTGGGGGCGGGTATTATGGTATGGACTATTGGGGTCGAGGAACCTCAGTCACCGTCTCCTCA	89
SC37.22	Light Chain	CAGGCTGTTGTGACTCAGGAATCTGCACTCACCACATCACCTGGTGAAACAGTCACACTCACTTGTCGCTCAAGTACTGGGGCTGTTACAACTAGTAACTATGCCAACTGGGTCCAAGAAAAACC AGATCATTTATTCACTGGTCTAATAGGTGGTACCAACAACCGAGCTCCAGGTGTTCCTGCCAGATTCTCAGGCTCCCTGATTGGAGACAAGGCTGCCCTCACCATCACAGGGGCACAGACTGAGG ATGCGGCAATATATTTCTGTGCTCTATGGTGCAGCAACCATTGGGTGTTCGGTGGAGGAACCAAACTGACTGTCCTA	91

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.22	Heavy Chain	CAGATCCAGTTGGTGCAGTCTGGACCTGAGCTGAAGAAGCCTGGAGAGACAGTCAAGATCTCCTGCAAGGCTCCTGGGTATACCTTCAGAAACTATGGATTGAACTGGGTGAAGCAGGCTCCAGGAAAGGGTTTAAAGTGGATGGGTTGGATAAACACTAACACTGGAGAGCCAACATATACTGATGACTTCAAGGGACGGTTTGCCTTCTCTTTGGATACCTCTGCCAGCACTGCCTATTTGCAGATCAATAACCTCAAAAATGAGGACATGGCAACATATTTCTGTGCAAGATCTCATGATTTCTCCTTTGTTTATTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	93
SC37.23	Light Chain	GACATCCAGATGACACAATCTTCATCCTCCTTTTCTGTATCTCTAGGAGACAGAGTCACCATTACTTGCAAGGCAAGTGAGGACATATATAATCGGTTAGCCTGGTTTCAGCAGAAACCAGGAAATGCTCCTAGGCTCTTGATATCTGGTGCAACCAGTTTGGAAACTGGGGTTCCTTCAAGATTCAGTGGCAGTAGATCTGGAGAGGATTACACTCTCATCATTACCAGTCTTCAGACTGAGGATGTTGCTACTTATTACTGTCAACAGTTTTGGACTACTCCTCCGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	95
SC37.23	Heavy Chain	CAGGTTCAGCTGCAGCAGTCTGGAACTGAGCTGATGAAGCCTGGGGCCTCAGTGAAGATATCCTGCAAGGCTACTGGCTACACATTCAGTAGCTACTGGATAGAGTGGGTAAAGCAGAGGCCTGGACATGGCCTTGAGTGGATTGGAGAGATTTTACCTGGAAGTGGTAGTACTAACTACAATGAGAAGTTCAAGGGCAAGGCCACATTCACTGTAGATACATCCTCCAACACAGCCTACATGCAACTCAGCAGCCTGACATCTGAGGACTCTGCCGTCTATTACTGTGCAAGAATAATACGGGACTTCTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	97
SC37.28	Heavy Chain	CAGGTTCAGCTGCAGCAGTCTGGAACTGAGCTGATGAAGCCTGGGGCCTCAGTGAAGATATCCTGCAAGGCTACTGGCTACACATTCAGTGCCTATTGGATAGAGTGGGTAAAGCAGAGGCCTGGACATGGCCTTGAGTGGATTGGAGAGATTTTACCTGGAAGTGGTAGTACTAACTGCAATGAGAAGTTCAGGGCCAAGGCCACATTCACTGCAGATACATCCTCCAACACAGCCTACATGCAACTCAGCAGCCTGACATCTGAGGACTCTGCCGTCTATTACTGTGCAAGAATACTACGGGACCTCTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	99
SC37.29	Light Chain	GATATTGTGCTAACTCAGTCTCCAGCCACCCTGTCTGTGCCTCCAGGAGATGGAGTCAGTCTTTCCTGCAGGGCCAGTCAAAGTATTTGCAACTACCTACACTGGTTTCAACAAAAATCACATGAGTCTCCAAGGCTTCTCATCAAGTGTGCTTCCCAGTCCATCTCTGGGATCCCCTCCAGGCTCAGTGGCAGCGGATCAGGGACAGATTTCACTCTCAGTATCAACAGTGTGGAGACAGAAGATTTTGGAATGTATTTCTGTCAACAGAGTAACAACTGGCCGTGGACGCTCGGTGGAGGCTCCAGGGTGGAAATCAAA	101
SC37.29	Heavy Chain	CAGATCCAGTTGGTGCAGTCTGGACCTGAGCTGAAGAAGCCTGGAGAGACAGTCAAGATCTCCTGCAAGGCTTCTGGGTATACCTTCACAAACTATGGAATGAACTGGGTGAAACAGGCTCCAGGAAAGGGTTTGAAGTGGATGGGCTGGGTAAACACCCACACTGGAGAGCCAACATATGGTGATGACTTCAAGGGACGGTTTGCCTTCTCTTTGGAAACCTCTGCCAGCACTGCCTATTTGCAGATCAACAGCCTCAAAAATGAGGACATGGCTACATATTTCTGTGCAGGATCTTATGATTACTCCTTTGCTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	103

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FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.37	Light Chain	CAAATTGTTCTCACCCAGTCTCCAGCAATCATGTCTGCATCTCCAGGGGAGAAGGTCACCATAACCTGCAGTGCCAGCTCAAGTGTAAGTTACATGCACTGGTTCCAGCAGAAGCCAGGCACTTC TCCCAAACTCTGGATTTATGGCACATCCAACCTGGCTTCTGGAGTCCCTGCTCGCTTCAGTGGCAGTGGATCTGGGACCTCTTACTCTCTCACAATCAGCCGAATGGAGGCTGAAGATGCTGCCA CTTATTACTGCCAGCAAAGGAGTAGTTACCCACCCTACACGTTCGGAGGGGGGACCAAGCTGGAAATAAAA	105
SC37.37	Heavy Chain	CAGGTCCAGCTGCAGCAGTCTGCAGCTGAACTGGCAAGACCTGGGGCCTCAGTGAAGATGTCCTGCGAGGCTTCTGGCTACACCTTTACAAGCTACACGATACACTGGATAAAACAGAGGCCTGG ACAGGGTCTGGAATGGATTGGATACATTAATCCTAATAATGGATATACTGAGTACAATCAGAAGTTCAAGGACAAGACCACAGTGACTGTAGACAAATCCTCCAGCACAGCCCACATGCAACTGA GCAGCCTGACATCTGAGGACTCTGCGGTCTATTACTGTGCAAGGGGACTCTCTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	107
SC37.39	Light Chain	GACATTGTGATGACCCAGTCTCAAAAATTCATGTCCACATCAGGAGGAGACAGGGTCAGCGTCACCTGCAAGGCCAGTCAGAATGTGGGTATTAATGTAGCCTGGTATCAACAGAAACCAGGGCA ATCTCCTAAAGCACTGATTTACTCGGCATCCTACCGGTACAGTGGAGTCCCTAATCGCTTCACAGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAATGTGCAGTCTGAAGACTTGG GAGACTATTTCTGTCACCAATATAAAACCTATCCGTACACGTTCGGAGGGGGGACCAAGCTGGAAATAAAA	109
SC37.39	Heavy Chain	CAGGTCCAGCTACAGCAGTCTGCAGCTGAACTGGCAAGACCTGGGGCCTCAGTGAAGATGTCCTGCAAGGCTTCTGGCTACACCTTTACTACCTACACGATACACTGGGTAAAACAGAGGCCTGG ACAGGGTCTGAAATGGATTGGATACATTAATCCTCGCAGTGGATATACTGAGTACAATCAGAAGTTCCAGGACAAGACCACAATGACCTCAGACAACTCCTCCAGCACAGCCTATATTCAACTGA GCAGCCTGACATCTGAGGATTCTGCGGTCTATTACTGTGCAAGATCCTACGAATTCTGGGGCCAAGGCACCACTCTCACAGTCTCCTCG	111
SC37.40	Light Chain	AACATTGTACTGACCCAATCTCCAGCTTCTTTGGCTGTGTCTCTAGGGCAGAGGGCCACCATTTCCTGCAGAGCCCGTGAAAGTGTTGATACTTATGGCAATAGTTTTATACACTGGTACCAGCA GAAACCAGGACAGCCACCCAAACTCCTCATCTATCTTGCATCCAACCTAGAATCTGGGGTCCCTGCCAGGTTCAGTGGCAGTGGGTCTAGGACAGACTTCACCCTCACCATTGATCCTGTGGAGG CTGATGATGCTGCAACCTATTACTGTCAGCAAAATAATGAGGATCCGCTCACGTTCGGTGCTGGGACCAAGCTGGAGCTGAAA	113
SC37.40	Heavy Chain	GAGGTTCAGCTGCAGCAGTCTGGGGCAGACCTTGTGAAGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGGTTCTGGCTTCAACATTAAAGACACCTATATACACTGGGTGAGGCAGAGGCCTGA ACAGGGCCTGGAGTGGATTGGAAGGATTGATCCTGCGAATGGTAAGGCTAATTATGACCCGAAGTTCCAGGGCAAGGCCACAATAACAGCAGACACATCCTCCAAGACAGCCTACGTGCAGCTCA GCAGCCTGACATCTGAGGACACTGCCGTCTATTACTGTGCTCTTGGGGGCGGGTACTATGGTATGGACTACTGGGGTCGAGGAACCTCAGTCACCGTCTCCTCA	115

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.41	Light Chain	AACATTGTGCTGACCCAATCTCCAGCTTCTTTGGCTGTGTCTCTAGGGCAGAGGGCCACCATATCCTGCAGAGCCAGTGAAAGTGTTGATAGTTATGGCAATAGTTTTATGCACTGGTACCAGCA GAAACCAGGTCAGCCACCCAAACTCCTCATCTATCTTGCATCCAACCTAGAATCTGGGGTCCCTGCCAGGTTCAGTGGCAGTGGGTCTAGGACAGACTTCACCCTCACCATTGATCCTGTGGAGG CTGATGATGTTGCAACCTATTACTGTCAGCAAAATAATGAGGATCCGTACACGTTCGGAGGGGGGACCAAGCTGGAAATAAAA	117
SC37.41	Heavy Chain	GAGGTTCAGCTGCAGCAGTCTGGGGCAGAGTTTGTGAAGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGCTTCTGGCTTCAACATTAAAGACACCTATATGCACTGGGTGAAGCAGAGGCCTGA ACAGGGCCTGGAGTGGATTGGAAGGATTGATCCTGCGAATGGTAATTCTAAATATAACCCGAAGTTCCAGGCCAAGGCCACTATAACAACAGACACATCCTCCAACACAGCCTACCTGCAGCTCA GCAGCCTGACATCTGAGGACACTGCCGTCTATTTCTGTACTCCCCCAACTGGGCCCTACTATGGTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA	119
SC37.44	Light Chain	GATATTGTGCTAACTCAGTCTCCAGCCACCCTGTCTGTGACTCCAGGAGATAGAGTCAGTCTTTCCTGCAGGGCCAGTCAAAATATTAGCAACTACCTACACTGGTTTCAACAAAAATCACATGA GTCTCCAAGGCTTCTTATTAACTATGCTTCCCAGTCCATCTCTGGGATCCCCTCCAGGTTCAGTGGCAGTGGATCAGGGACAGATTTCACTCTCAGTTTTAATAGTGTGGAGACTGAAGATTTTG GACTGTATTTCTGTCAACAGAGTAACAGCTGGCCGTGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	121
SC37.45	Light Chain	GACATCCAGATGACACAATCTTCATCCTCCTTTTCTGTATCTCTAGGAGACAGAGTCACCATTACTTGCAAGGCAAGTGAGGACATATATAATCGCTTAGCCTGGTATCAGCAGAAACCAGGAAA TGCTCCTAGGCTCTTAATATCTGGTGCAACCAGTTTGGAAACTGGGGTTCCTTCAAGATTCAGTGGCAGTGGATCTGGAAAGGATTACACTCTCAGCATTACCAGTCTTCAGACTGAAGATGTTG CTACTTATCACTGTCAACAGAATTGGAGTACTCCTCCGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	123
SC37.45	Heavy Chain	CAGGTTCAGCTGCAACAGTCTGGAGCTGAGCTGATGAAGCCTGGGGCCTCAGTGAAGATATCCTGCAAGGCCACTGGCTACACATTCAGTAGGTACTGGATAGAGTGGGTAAAGCAGAGGCCTGG ACATGGCCTTGAGTGGATTGGAGAGATTTTACCTGGAAGTGGTAGTACTAACTACAATGAGAAGTTCAAGGGCAAGGCCACATTCACTGCAGATACATCCTCCAACACAGCCTACATGCAACTCA CCAGCCTGACATCTGAGGACTCTGCCGTCTATTTCTGTGAAAGACGGGGGGCTTATTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	125
SC37.47	Light Chain	AACATTGTGCTGACCCAATCTCCAGCTTCTTTGGCTGTGTCTCTAGGGCAGAGGGCCACCATATCCTGCAGAGCCAGTGAAAGTGTTGATACTTATGGCAATAGTTTTATACACTGGTACCAGCA GAAACCAGGACAGCCACCCAAACTCCTCATCTATCTTGCATCCAACCTAGAATCTGGGGTCCCTGCCAGGTTCAGTGGCAGTGGGTCTAGGACAGACTTCACCCTCACCATTGATCCTGTGGAGG CTGATGATGCTGCAACCTATTACTGTCAGCAAAATAATGAGGATCCGCTCACGTTCGGTGCTGGGACCAAGCTGGAGCTGAAA	127

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.47	Heavy Chain	GAGGTTCAGCTGCAGCAGTCTGGGGCAGAGCTTGTGAAGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGCTTCTGGCTTCAACATTAAAGACACCTATATGCACTGGGTGAAGCAGAGGCCTGA ACAGGGCCTGGAGTGGATTGGAAGGATTGATCCTGCGAATGGTAATACTAAATATGACCCGAAGTTCCAGGGCAAGGCCACTATAACAGCTGACACATCCTCCAACACAGCCTACCTGCAGCTCA GCAGCCTGACATCTGAGGACACTGCCGTCTATTACTGTGCTACCGGAGGTGGTTACTATGCTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA	129
SC37.48	Light Chain	GACATCAAGATGACCCAGTCTCCATCTTCCATGTATGCATCTCTAGGAGAGAGAGTCACTATCACTTGCAAGGCGAGTCAGGACATTAATAGCTATTTAAGCTGGTTCCAGCAGAAACCAGGGAA ATCTCCTAAGACCCTGATCTATCGTGCAAAGAGATTGTTAGATGGGGTCCCATCAAGGTTCAGTGGCAGTGGATCTGGGCAAGATTATTCTCTCACCATCAGCAGCCTGGAGTATGAAGATATGG GAATTTATTATTGTCTACAGTATGATGAATTTCCGTACACGTTCGGAGGGGGGACCAAGCTGGAAATAAAA	131
SC37.48	Heavy Chain	CAGGTCCAGCTGCAGCAGTCTGGGGCTGAACTGGCAAGACCTGGGGCCTCAGTGAAGATGTCCTGCAAGGCTTCTGGCTACACCTTCACTAGTTACACGATACACTGGGTGAAACAGAGGCCTGG ACAGGGTCTGGAATGGCTTGGCTACATTAATCCTCGCAGTAATTATACTAATTACAATCAGAGGTTCAAGGACAAGGCCACATTGACTGCAGACAAATCCTCCAGCACAGCCTACATGCAACTGA GCAGCCTGACATCTGAAGACTCTGCAGTCTATTACTGTACAAGATGGGGGGAGGACTTCTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	133
SC37.51	Light Chain	GATATTGTGCTAACTCAGTCTCCAGCCACCCTGTCTGTGCCTCCAGGAGATGGAGTCAGTCTTACCTGCAGGGCCAGTCAAAGTATTTGCAACTACCTTCACTGGTATCAACAAAAATCCCATGA GTCTCCAAGGCTTCTCATCAAGTATACTTCCCAGTCCATCTCTGGGATCCCCTCCAGGTTCAGTGGCTGTGGATCAGGGACAGATTTCACTCTCAGTATCAACAGTGTGGAGACTGAAGATTTTG GAATGTATTTCTGTCAACAGAGTAACAGCTGGCCGTGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	135
SC37.51	Heavy Chain	CAGATCCAGTTGGTGCAGTCTGGACCTGAACTGAAGAAGCCTGGAGAGACAGTCAAGATCTCCTGCAAGGCTTCTGGGTATACCTTCACAAACTATGGAATGAACTGGGTGAAGCAGGCTCCAGG AAAGGGTTTAAAGTGGATGGGCTGGATAAACACCCACACTGGAGAGCCAACATATGCTGATGACTTCAAGGGACGGTTTGCCTTCTCTTTGGACACCTCTGCCAACACTGCCTATTTACAGATCA ACAACCTCAGAAATGAGGACATGGCTACATATTTCTGTGCAGGATCTTATGATTACTCCTTTGCTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	137
SC37.72	Light Chain	CAGGCTGTTGTGACTCAGGAATCTGCACTCATTACATCACCTGGTGAAACAGTCACACTCACTTGTCGTTCAAGTACTGGGGCTGTTACAACTAGTAACTATGCCAACTGGGTCCAAGAAAAACC AGATCATTTATTCACTGGTCTAATAGGTGGTACCAACAACCGAGCTCCAGGTGTTCCTGCCAGATTCTCAGGCTCCCTGATTGGAGACAAGGCTGCCCTCACCATCACAGGGGCTCAGACTGAGG ATGAGGCAATATATTTCTGTGCTCTATGGTACAGCAACCATTGGGTGTTCGGTGGAGGAACCAAACTGACTGTCCTA	139

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.72	Heavy Chain	CAGATCCAGTTGGTGCAGTCTGGACCTGAGCTGAAGAAGCCTGGAGAGACAGTCAAGATCTCCTGCAAGGCTCCTGGGGATACCTTCAGAAACTATGGATTGAACTGGGTGAAGCAGGCTCCAGGAAAGGGTTTAAAGTGGATGGGCTGGATAAACACTAACACTGGAGAGCCAACATATGATGATGACTTCAAGGGACGGTTTGCCTTCTCTTTGGAAACCTCTGCCACCACAGCCTATTTGCAGATCAATAACTTCAAAAATGAGGACATGGCAACATATTTCTGTGCAAGATCTCATGATTTCTCCTTTGTCTATTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	141
SC37.75	Light Chain	AACATTGTGCTGACCCAATCTCCAGCTTCTTTGGCTGTGTCTCTAGGGCAGAGGGCCACCATATCCTGCAGAGCCAGTGAAAGTGTTGATACTTATGGCAATAGTTTTATACACTGGTACCGGCAGAAACCAGGACAGCCACCCAAACTCCTCATCTATCTTGCATCCAACCTAGAATCTGGGGTCCCTGCCAGGTTCAGTGGCAGTGGGTCTAGGACAGACTTCACCCTCACCATTGATCCTGTGGAGGCTGATGATGCTGCAACCTATTACTGTCAGCAAAATAATGAGGATCCGCTCACGTTCGGTGCTGGGACCAAGCTGGAGCTGAAA	143
SC37.77	Light Chain	GACATCAAGATGACCCAGTCTCCATCTTCCATGTATGCATCTCTTGGAGAGAGAGTCACTATCACTTGCAAGGCGAGTCAGGACATTAATAGCTATTTAAGCTGGTTCCAGCAGAAACCAGGGAATTCTCCTAAGACCCTGATCTATCGTGCAAACAGATTGTTAGATGGGGTCCCATCAAGGTTCAGTGGCAGTGGATCTGGGCAAGATTATTCTCTCACTATCAGCAGCCTGGACTATGAAGATATGGGAATTTATTATTGTCTACAGTATGATGAGTTTCCGTACACGTTCGGAGGGGGGACCAAGCTGGAAATAAAA	145
SC37.77	Heavy Chain	CAGGTCCAGCTGCAGCAGTCTGGGGCTGAACTGGCAAGACCTGGGGCCTCAGTGAAGATGTCCTGCAAGGCTTCTGGCTACACCTTTACTAGCTACACGATACACTGGGTAAAACAGAGGCCTGGACAGGGTCTGGAATGGATTGGATACATTAATCCTAGAAATAATTATACTAATTACAATCAGAACTTCAAGGACAAGGCCACATTGACTGTAGACAAATCCTCCAGCACAGCCTACATGCAACTGAGCAGCCTGACATCTGAGGACTCTGCAGTCTATTACTGTGCAAGATGGGGGGAGGACTACTGGGGCCAAGGCTCCACTCTCACAGTCTCCTCA	147
SC37.108	Light Chain	GATGTTGTGATGACCCAGACTCCACTCACTTTGTCGGTTACCATTGGACAACCAGCCTCCATCTCTTGCAAGTCAAGTCAGAGCCTCCTAGATAGTGATGGAAAGACATATTTGAATTGGTTGTTACAGAGGCCAGGCCAGTCTCCAAAGCGCCTAATCTATCTGGTGTCTAAACTGGACTCTGGAGTCCCTGACAGGTTCACTGGCAGTGGATCAGGGACAGATTTCACACTGAAAATCAGCAGAGTGGAGGCTGAGGATTTGGGAGTTTATTATTGCTGGCAAGGTACACATTCTCCGTGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	149
SC37.108	Heavy Chain	CAGGTCCAACTGCAGCAGCCTGGGGCTGAACTGGTGAAGCCTGGGGCTTCAGTGAAGTTGTCCTGCAAGGCTTCTGGCTACACCTTCACCAGCTACTATATATACTGGGTGAAGCAGAGGCCTGGACAAGGCCTTGACTGGATTGGGGGGATTAATCCTAGGAATGGTGGTACTAACTTCAATGAGAAGTTCAAGAGCAAGGCCACACTGACTGTAGACAAATCCTCCAGCACAGCCTACATGCAACTCAGCAGCCTGACATCTGAGGACTCTGCGGTCTATTACTGTACAAGATCGTGGACTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	151

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.122	Light Chain	GATGTTTTGATGACCCAAACTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCCATCTCTTGCAGATCTAGTCAGACCATTGTACATAGTGATGGCAACACCTATTTAGAGTGGTACCT GCAGAAACCAGGCCAGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTTTCTGGGGTCCCAGACAGGTTCAGTGGCAGTGGATCAGGGACAGATTTCACACTCAAGATCAGCAGAGTGG AGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTCACATGTTCCGTGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	153
SC37.122	Heavy Chain	CAGGTTCAACTGCAGCAGTCTGGAGCTGAGCTGGTGAGGCCTGGGGCTTCAGTGACGCTGTCCTGCAAGGCTTCGGGCTACACATTTACTGACTATGAAATGCACTGGGTGAAGCAGACACCTGT GCATGGCCTGGAATGGATTGGAGCTATTGATCCTGAAACTGGTGGTACTGCCTACAATCAGAAGTTCAAGGGCAAGGCCACACTGACTGCAGACAAATCCTCCAGCACAGCCTACATGGAGCTCA GCAGCCTGACATCTGAGGACTCTGCCGTCTATTACTGTACCCGGACGGGGTTTGCTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	155
SC37.127	Light Chain	GACATCCAGATGACTCAGTCTCCAGCCTCCCTATCTGTATCTGTGGGAGAAACTGTCACCATCACATGTCGAGCAAGTGAGAATATTTACAGTAAATTAGGATGGTATCAGCAGAAACAGGGAAA ATCTCCTCAGCTCCTGGTCTATGCTGCAACAAACTTAGCAGATGGTGTGCCATCAAGGTTCAGTGGCAGTGGATCAGGCACACAGTATTCCCTCAAGATCAACAGCCTGCAGTCTGAAGATTTTG GGAGTTATTACTGTCAACATTTTTGGGGTACTCCGTACACGTTCGGAGGGGGGACCAAGCTGGAAAAAAAA	157
SC37.136	Light Chain	GATATTGTGATGACTCAGGCTGCACCCTCTGTACCTGTCACTCCTGGAGAGTCAGTATCCATCTCCTGCAGGTCTAGTAAGAGTCTCCTGCATAGTAATGGCAACACTTACTTGTATTGGTTCCT GCAGAGGCCAGGCCAGTCTCCTCAGTTCCTGATATATCGGATGTCCAACCTTGCCTCAGGAGTCCCAGACAGGTTCAGTGGCAGTGGGTCAGGAACTGCTTTCACACTGAGAATCAGTAGAGTGG AGGCTGAGGATGTGGGTGTTTATTACTGTATGCAACATCTAGAATATCCTTTCACGTTCGGAGGGGGGACCAAGCTGGAAATAAAA	159
SC37.136	Heavy Chain	GAGGTTCAGCTGCAGCAGTCTGGGGCTGAGCTTGTGAGGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGCTTCTGGCTTTAACATTGAGGCCGACTATATGCACTGGGTGAAGCAGAGGCCTGA ACAGGGCCTGGAGTGGATTGGATGGATTGATCCTGAGATTGGTTCTACTGAATATGCCTCGAAGTTCCAGGGCAAGGCCACTATAACAGCAGACACATCCTCCAACACAGCCTACCTGCAGCTCA GCAGCCTGACATCTGAGGACACTGCCGTCTATTACTGTATTACAGATGGTAACTACGTGAAGGGCTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	161
SC37.141	Light Chain	GATATCCAGATGACACAGAGTACATCTTCCCTGTCTGCCTCTCTGGGAGACAGAGTCACCATCAGTTGCAGGGCAAGTCAGGACATTAGCAATTATTTAAACTGGTATCAGCAGAAACCAGATGG AACTGTTAAACCCCTTATCTATTACACATCAAGATTACACTCAGGAGTCCCATCAAGGTTCAGTGGCAGTGGGTCTGGAACAGATTATTCTCTCACCATTAGCAACCTGGACCAAGAAGATATTG CCACTTACTTTTGCCAACAGGGTAATACGCTTCCATTCACGTTCGGCTCGGGGACAAAGTTGGCAATAGAG	163

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FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.141	Heavy Chain	CAGGTCCAACTGCAGCAGCCTGGGGCTGAGCTGGTGAGGCCTGGGGCTTCAGTGAAGCTGTCCTGCAAGGCTTCTGGCTACACCTTCACCAGCTACTGGATGAACTGGGTGAAACAGAGACCTGG ACAAGGCCTTGAATGGATTGGTATGATTGATCCTTCAGACAGTGAAACTCACTACAGTCAAATGTTCAAGGACAAGGCCACATTGACTGTAGACCAATCCTCCAACACAGCCTACATGCACCTCA GCAGCCTGACATCTGAGGACTCTGCGGTCTATTACTGTGCAAGAGAGGGGTATTACTTCGATGGTACCAGGGGGATTGCTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGTA	165
SC37.150	Light Chain	GATGTTGTGATGACCCAAACTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCCATCTCTTGCAGATCTAGTCAGAGCCTTGTACACAGTAATGGAAACACCTATTTACATTGGTACCT GCAGAAGCCAGGCCAGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTTTCTGGGGTCCCAGACAGGTTCAGTGGCAGTGGATCAGGGACAGATTTCACACTCAAGATCAGCAGGGTGG AGGCTGAGGATCTGGGAGTTTATTTCTGCTCTCAAAGTACACATGTTCCGCTCACATTCGGTGCTGGGACCAAGCTGGAGCTGAAA	167
SC37.150	Heavy Chain	CAGATCCAGTTGGTGCAGTCTGGACCTGAGCTGAAGAAGCCTGGAGAGACAGTCAAGATCTCCTGCAAGGCTTCTGGGTATACCTTCACAAACTATCCAATACACTGGGTGAAGCAGGCTCCAGG AAAGGGTTTAAAGTGGATGGGCTGGATAAACACCTACTCTGGAGTGCCAACATATGCAGATGACTTCAAGGGACGGTTTGCCTTCTCTTTGGAAACCTCTGCCAGCACTGCATATTTGCAGATCA ATAACCTCAAAAATGAGGACATGGCTACATATTTCTGTGAAGGGGGCGGTATCTACTATAATAACTACGGGTATGTTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA	169
SC37.160	Light Chain	CAAATTGTTCTCACCCAGTCTCCAGCAATCATGTCTGCATCTCCAGGGGAGAAGGTCTCCATAACCTGCAGTGCCAGCTCAAGTGTAAGTTACATGCACTGGTTCCAGCAGAAGCCGGGCACTTC TCCCAAACTCTGGATTTATAGCACATCCAACCTGGCTTCTGGAGTCCCTACTCGCTTCAGTGGCAGTGGATCTGGGACCTCTTACTCTCTCACAATCAGCCGAATGGAGGCTGAAGATGCTGCCA CTTATTACTGCCAGCAAAGGAGTAATTACCCATTCACGTTCGGCTCGGGGACAAAGTTGGAAATAAAA	171
SC37.160	Heavy Chain	CAGGTTCAGCTGCAGCGGTCTGGAGCTGAGCTGGCGAGGCCTGGGGCTTCAGTGAAGCTGTCCTGCAAGGCTTCTGGCTACACCTTCACAAGCTATGGTATAAGCTGGGTGAAGCAGAGAACTGG ACAGGGCCTTGAGTGGATTGGAGAGATTTTTCCTGGAAGTGGTAATACTTACTACAATGAGATGTTCAAGGGCAAGGCCACACTGACTGCAGACAAATCCTCCAGCACAGCGTACATGGAGCTCC GCAGCCTGACATCTGAGGACTCTGCGGTCTATTTCTGTGCAAGAGGGGATTACTACGGTAGTAGCTCCTTTGACTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	173
SC37.163	Light Chain	GATGTTTTGATGACCCAAACTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCCATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAATGGAAACACCTATTTACAATGGTACCT GCAGAAACCAGGCCAGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTTTCTGGGGTCCCAGACAGGTTCAGTGGCAGTGGATCAGGGACAGATTTCACACTCAAGATCAGCAGAGTGG AGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTCACATGTTCCTCCGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	175

FIG. 7C Cont.

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Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.163	Heavy Chain	CAGGTTCAACTGCAGCAGTCTGGAGCTGAGCTGGTGAGGCCTGGGGCTTCAGTGACGCTGTCCTGCAAGGCTTCGGGCTACACATTTACTGACTATGAAATGCACTGGCTGAAGCAGACACCTGT GCATGGCCTGGAATGGATTGGAGCTATTGATCCTGAAACTGGTGGTACTGCCTACAATCAGAAGTTCAAGGGCAAGGCCACACTGACTGCAGACAAATCCTCCAGCACAGCCTCCATGGAGCTCA GCAGCCTGACATCTGAGGACTCTGCCGTCTATTACTGTACCCGGACGGGGTTTGTTTACTGGGGCCAAGGGACTCTAATCACTGTCTCTGCA	177
SC37.169	Light Chain	GACATTGTGATGACCCAGTCTCAAAAATTCATGTCCACATCAGTAGGAGACAGGGTCAGCGTCACCTGCAAGGCCAGTCAGAATGTGGGTACTAATGTCGCCTGGTTTCAACAGAAACCAGGGCA ATCTCCTAAACTACTGATTTACTCGGCATCCTACCGATACAGTGGAGTCCCTGATCGCTTCACAGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAATGTGCAGTCTGAAGACTTGG CAGAGTTTTTCTGTCAGCAATATAACACCTATCCCCTCACGTTCGGTGCTGGGACCAAGCTGGAGCTGAAA	179
SC37.169	Heavy Chain	CAGGTTCAGCTGCAGCAGTCTGGAGCTGAGGTGATGAAGCCTGGGGCCTCAGTGAAGCTTTCCTGCAAGGCTACTGGCTACACATTCACTGGCTACTGGATAGAGTGGGTAAAGGAGAGGCCTGG ACATGGCCTTGAGTGGATTGGAGAGATTTTACCTGGAAGTGGTAGTACTAACTACAATGAGAAGTTCAAGGGCAAGGCCACATTCACTGCAGATCCATCCTCCAATACAGCCTACATGCAACTCA GCAGCCTGACAACTGAGGACTCTGCCATCTATTACTGTGCAAGGGACTACGGCTCCTTTGGTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	181
SC37.170	Light Chain	GACATTGTGATGACCCAGTCTCACAAATTCATGTCCACATCAGTAGGAGACAGGGTCAGCATCACCTGCAAGGCCAGTCAGGATGTGAGTACTGCTGTAGCCTGGTATCAACAGAAACCAGGACA ATCTCCTAAACTACTGATTTACTCGGCATCCTACCGGTACACTGGAGTCCCTGATCGCTTCACTGGCACTGGATCTGGGACGGATTTCACTTTCACCATCAGCAGTGTGCAGGCTGAAGACCTGG CAGTTTATTACTGTCAGCAACATTATAGTACTCCGCTCACGTTCGGTGCTGGGACCAAGCTGGAGCTGAAA	183
SC37.170	Heavy Chain	CAGGTCCAACTGCAGCAGCCTGGGTCTATGCTGGTGAGGCCTGGAGCTTCAGTGAAGCTGTCCTGCAAGGCTTCTGGCTACACATTCACCCACTACTGGATGCACTGGGTGAAGCAGAGGCCTGG TCAAGGCCTTGAGTGGATTGGAGAGATTTATCCTAATAGTGGTAGGACTAACTACAATGAGAAGTTCAAGGGCAAGGCCACACTGACTGTTGACACATCCTCCAGCACAGCCTACGTGGATCTTA GTAGCCTGACATCTGCGGACTCTGCGGTCTATTACTGTGCAAGAGGATATGATCCCTTTGACTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	185
SC37.172	Heavy Chain	GAGGTTCAGCTGCAGCAGTCTGGGGCTGAGCTTGTGAGGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGCTTCTGGCTTTAACATTGAGGCCGACTATATGCACTGGGTGAAGCAGAGCCCTGA ACAGGGCCTGGAGTGGATTGGATGGATTGATCCTGAGATTGGTGCTACTGAATATGCCTCGAAGTTCCAGGGCAAGGCCACTATGACAGCAGACACATCCTCCAACACAGCCTACCTGCAGCTCA GCAGCCTGACATCTGAGGACACTGCCGTCTATTACTGTATTACAGATGGTAACTACGTGAAGGGCTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	187

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.177	Light Chain	GACATTGTGATGTCACAGTCTCCATCCTCCCTAGCTGTGTCAGTTGGAGAGAAGGTTACTATGAGCTGCAAGTCCAGTCAGAGCCTTTTATATAGTACCAATCAAAAGAACTACTTGGCCTGGTACCAGCAGAAACCAGGGCAGTCTCCTAAACTGCTGATTTACTGGGCATCCACTAGGGAATCTGGGGTCCCTGATCGCTTCACAGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAGTGTGAAGGCTGAAGACCTGGCAGTTTATTACTGTCAGCAATATTATGACTATTGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	189
SC37.177	Heavy Chain	CAGGTTTCTCTGATAGAGTCGGGCCCTGGGATAATGCAGCCCTCCCAGACCCTCAGTCTGACTTGCTCTTTCTCTGGGTTTTCACTGAGCGCTTCTGATATGGGTGTAGGCTGGATTCGTCAGCCTTCAGGGAAGGGTCTGGAATGGCTGGCAAACATTTGGTGGGATGATAGTAAGTACTATAACGCCGCCCTGAAGACCCGGCTCACAATCTCCAAGGATACCTCCAAAAACCAGGTATTCCTCAAGATCGCCAGTGTGGACACTGCAGATACTGCCACATACTACTGTGCTCGAATATCTAGGGCCTACTATGGTCACTGGTTTGCTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA	191
SC37.185	Light Chain	GACATTGTGATGTCACAGTCTCCATCCTCCCTAGCTGTGTCAGTTGGAGAGAAGGTTACTATGAGCTGCAAGTCCAGTCAGAGCCTTTTATATAGTAGAAATCAAAAGAACTACTTGGCCTGGTACCAGCAGAAACCAGGGCAGTCTCCTAAACTGCTGATTTATTGGGCATCCACTAGGGAATCTGGGGTCCCTGATCGCTTCACAGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAGTGTGAAGGCTGAAGACCTGGCAGTTTATTACTGTCAGCAATATTATAGCTATTGGACGTTCGGTGGAGGCTCCAAGCTGGAAATCAAC	193
SC37.185	Heavy Chain	CAGGTCCAACTGCAGCAGCCGGGGGCTGAGCTGGTGAGGCCTGGGTCTTCAGTGAAGCTGTCCTGCAAGGCTTCTGGCTACACCTTCACCAGCTATTGGATGGATTGGGTGAAGCAGAGGCCTGGACAAGGCCTTGAATGGATTGGTAACATTTACCCTTCTGATGGTGAAACTCACTACAATCAAAAGTTCAAGGACAAGGCCACATTGACCGTAGACAGATTGTCCAGCACAGCCTACATGCAGCTCAGCAGCCTGACATCTGAGGACTCTGCGGTCTATTACTGTGCAAGACATTACTACGCTGGTAGCCCGTACTACTTTGACTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	195
SC37.191	Light Chain	AGGATTGTGATGACCCAGACTCCCAAATCCCTGCTTGTATCAGCAGGAGACAGGGTGACCATAACCTGCAAGGCCAGTCAGAGTGTGAGTAATGATGTAACTTGGTACCAACAGAAGCCAGGGCAGTCTCCTAAACTGCTCATATACTATGCATCCAATCGCAACACTGGAGTACCTGATCGCTTCACTGGCAGTGGATATGGGACGGATTTCACTTTCACCATCAGCACTGTGCAGGCTGAAGACCTGGCAGTTTATTTCTGTCAGCAGGATTATGGCTCTCCATTCACGTTCGGGTCGGGGACAAAGTTGGAGATAAAA	197
SC37.191	Heavy Chain	CAGGTCCAACTGCAGCAGCCTGGGTCTGTGCTGGTGAGGCCTGGAGCTTCAGTGAAGCTGTCCTGCAAGGCTTCTGGCTACACATTCACCAACTACTGGTTGCACTGGGTGAAGCAGAGGCCTGGACAAGGCCTTGAGTGGATTGGAGAGATTTATCCTAATAGTGGTAGGACTAACTACAATGAGAAGTTCAAGGACAAGGCCACACTGACTGGAGACACATCCTCCAACACAGCCTACGTGGATCTCATCAGCCTGACATCTGAGGACTCTGCGGTCTATTACTGTGCGGTAGCTACCCCACCTGACTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	199

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.193	Light Chain	GATATTGTGATGACTCAGGATGCACCCTCTATACCTGTCACTCCTGGAGAGTCAGTATCCATCTCCTGCAGGTCTAGTAAGAGTCTCCTGCATAGTAATGGCAACACTTACTTGTATTGGTTCCT GCAGAGGCCAGGCCAGTCTCCTCAGCTCCTGATATATCGGATGTCCAACCTTGCCTCAGGAGTCCCAGACAGGTTCAGTGGCAGTGGGTCAGGAACTGCTTTCACACTGAGAATCAGTAGAGTGG AGGCTGAGGATGTGGGTGTTTATTACTGTATGCAACATCTAGAATATCCTTTCACGTTCGGCTCGGGGACAAAGTTGGAAATAAAA	201
SC37.193	Heavy Chain	GAGGTTCAGTTGCAGCAGTCTGGGGCTGAACTTGTGAGGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGCTTCTGGCTTTAACATTAAGGACGACTATATGCACTGGATGAAGCAGAGGCCTGA ACAGGGCCTGGAATGGCTTGGATGGATTGATCCTGAGATTGGTGCTACTGAATATGCCTCGAAGTTCCAGGGCAAGGCCACTATGACAGCGGACACATCCTCCAACACAGCCTACCTGCAGCTCA GCAGCCTGACATCTGAGGACACTGCCGTCTATTACTGTGTCGATGACCGTCGTGGTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA	203
SC37.196	Light Chain	GATATTGTGATGACTCAGGCTGCCCCCTCTGTACCTGTCACTCCTGGAGAGTCAGTATCCATCTCCTGCAGGTCTAGTAAGAGTCTCCTACATAGTAATGGCAACACTTACTTATATTGGTTCCT GCAGAGGCCAGGCCAGTCTCCTCAGCTCCTGATATATCGGATGTCCAACCTTGCCTCAGGAGTCCCAGACAGGTTCAGTGGCAGTGGGTCAGGAACTGCTTTCACACTGAGAATCAGTAGAGTGG AGGCTGAGGATGTGGGTGTTTATTACTGTATGCAACATCTAGAATATCCTTTCACGTTCGGCTCGGGGACAAAGTTGGAAATAAAA	205
SC37.196	Heavy Chain	GAGGTTCAGCTGCAGCAGTCTGGGACTGAGCTTGTGAGGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGCTTCTGGCTTTAACATTGAAGCCGACTATTTGCACTGGGTGAAGCAGAGGCCTGA ACAGGGCCTGGAGTGGATTGGCTGGATTGATCCTGAAATTGGTTCTACTGAATATGCCTCGAAATTCCGGGGCAAGGCCTCTATAACAGCAGACACATCCTCCAACACAGCCTACCTGCAGCTCA ACAGCCTGACATCTGAGGACACTGCCGTCTATTACTGTGCTATTGACGGGACTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA	207
SC37.202	Light Chain	GACATTGTGATGTCACAGTCTCCATCCTCCCTAGCTGTGTCAGTTGGAGAGGAAGTTACTATGAGCTGTAAGTCCAGTCAGAGCCTTTTATATAGTACCAATCAAAAGAACTACTTGGCCTGGTA CCAGCAGAAGCCAGGGCAGTCTCCTAAACTGCTGATTTACTGGGCATCCACTAGGGAATCTGGGGTCCCTGATCGCTTCACAGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAGTG TGAAGGCTGAAGACCTGGCAGTTTATTACTGTCAGCAATATTATGACTATTACACGTTCGGAGGGGGGACCAAGCTGGAAATAAAA	209
SC37.202	Heavy Chain	CAGGTTTCTCTGAAAGAGTCGGGCCCTGGGATATTGCAGCCCTCCCAGACCCTCAGTCTGACTTGTTCTTTCTCTGGGTTTTCACTGAGCACTTCTGGTATGGCTGTAGGCTGGATTCGTCAGCC TTCAGGGAGGGGTCTGGAGTGGCTGGCAAACATTTGGTGGGATGATAGTCAGCATTATAACGCAGCCCTGAAGAGCCGGCTCACAATCTCCAAGGATACCTCCAAAAACCAGGTATTCCTCAAGA TCGCCAGTGTGGACACTGCAGATACTGCCACATACTACTGTGCTCGTTCTAACTGGGGCCGTTACTTTGACTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	211

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.212	Light Chain	GATATTGTGATGACTCAGGCTGTACCCTCTGTACCTGTCACTCCTGGAGAGTCAGTATCCATCTCCTGCAGGTCTAGTAAGAGTCTCCTGCATAGTAATGGCAACACTTACTTGTATTGGTTCCT GCAGAGGCCAGGCCAGTCTCCTCAGTTCCTGATATATCGGATGTCCAACCTTGCCTCAGGAGTCCCAGACAGGTTCAGTGGCAGTGGGTCAGGAACTGCTTTCACACTGAGAATCAGTAGAGTGG AGGCTGAGGATGTGGGTGTTTATTACTGTATGCAACATCTAGAGTATCCTTTCACGTTCGGAGGGGGGACCAGGCTGGAAATAAAA	213
SC37.212	Heavy Chain	GAGGTTCAGCTGCAGCAGTCTGGGGCTGAGCTTGTGAGGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGCTTCTGGCTTTAACATTGAAGTTGACTATATGCACTGGGTGAAGCAGAGGCCTGA ACAGGGCCTGGAGTGGATTGGATGGATTGATCCTGAGATTGGTGGTACTGAATATGCCTCGAAGTTCCAGGGCAAGGCCACTATAACAGCAGACACATCCTCCAACACAGTCTACCTGCACCTCA GCAGCCTGACACCTGAGGACACTGCCGTCTATTACTGTACTACAGATGGTAACTACGTGAAGGGCTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	215
SC37.217	Heavy Chain	GAGATTCAGCTGCAGCAGTCTGGGGCTGAGCTTGTGAGGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGCTTCTGGCTTTAACATTCAAGCCGACTATATGCACTGGGTGAAACAGAGGCCTGA ACAGGGCCTGGAGTGGATTGGATGGATTGATCCTGAGATTGGTGGTACTGAATATGCCTCGAAGTTCCAGGGCAAGGCCACTATAACAGCAGACACATCCTCCAACACAGTCTACCTGCAGCTCA GCAGCCTGACATCTGAGGACACTGCCGTCTATTACTGTATTACAGATGGTAACTACGTGAAGGGCTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	217
SC37.223	Light Chain	GATATCCAGATGACACAGACTACATCCTCCCTGTCTGCCTCTCTGGGAGACAGAGTCACCATCAGTTGCAGTGCAAGTCAGGGCATTGGCAATTATTTAAACTGGTATCAGCAGAAACCAGATGG AACTGTTAAACTCCTGATCTATTACACATCAAGTTTAAATTCAGGAGTCCCATCAAGGTTCAGTGGCAGTGGGTCTGGGACAGATTATTCTCTCACCATCAGCAACCTGGAACCTGAAGATATTG CCACTTATTTTTGTCAGCAGTATAGTAAGCTTCCGTACACATTCGGAGGGGGGACCAAGCTGGAAATAAAA	219
SC37.223	Heavy Chain	CAGGTCCAACTGCAGCAGCCTGGGGCTGAACTGGTGAAGCCTGGGGCTTCAGTGAAGTTGTCCTGCAAGGCTTCTGGCTACACCTTCACCACCTACTATATTTACTGGGTGAAACAGAGGCCTGG ACAAGGCCTTGAGTGGATTGGGGGGATTAATCCTAGAAATGGTGGTACTAACTTCAATGAGAAATTCAAGACCAGGGCCACGCTGACTGTAGACAAATCCTCCAGCACAGCCTACATGCAACTCA GCAGCCTGACATCTGAAGACTCTGCGGTCTATTACTGTACAAGAACCTTCTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	221
SC37.226	Light Chain	GATATTGTGATGACTCAGGCTGCACCCTCTGTACCTGTCACTCCTGGAGAGTCAGTATCCATCTCCTGCAGGTCTAGTAAGAGTCTCCTGCATAGTAATGGCAACACTTACTTATATTGGTTCCT GCAGAGGCCAGGCCAGTCTCCTCAGGTCCTGATATATCGGATGTCCAACCTTGCCTCAGGAGTCCCAGACAGGTTCAGTGGCAGTGGGTCAGGAACTGCTTTCACACTGAGAATCAGTAGAGTGG AGGCTGAGGATGTGGGTGTTTATTACTGTATGCAACATCTAGAATATCCTTTCACGTTCGGCTCGGGGACAAAGTTGGAAATAAAA	223

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.226	Heavy Chain	GAGGTTCAGCTGCAGCAGTCTGGGGCTGAGCTTGTGAGGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGCTTCTGGCTTTAACATTATAGTCGACTATTTGCACTGGGTGAGACAGAGGCCTGA ACAGGGCCTGGAGTGGATTGGATGGATTGATCCTGAGATTGGTTCTACTGAATATGCCTCGAAGTTCCAGGGCAAGGCCACTATGACAGCAGACACATCCTCCAACACAGCCTACCTGCAGCTCA GCAGCCTGACATCTGAGGACACTGCCGTCTATTACTGTATTATCGACGGGACTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA	225
SC37.231	Light Chain	GACATTGTGATGACCCAGTCTCAAAAATTCATGTCCACATCAGTGGGAGACAGGGTCAGCATCACCTGCAAGGCCAGTCAGAGTGTTCGTCCTGCTGTAGCCTGGTATCAACAGAAACCAGGGCA GTCTCCTAAAGCACTGATTTACTTGGCATCCAACCGGCACACTGGAGTCCCTGATCGCTTCACAGGCAGTGGATCTGGGACAGATTTCACTCTCACCATTAGCAATGTGCAATCTGAAGACCTGG CAGATTATTTCTGTCTGCAACATTGGAATTATCCGTACACGTTCGGAGGGGGGACCAAGCTGGAAATAAAA	227
SC37.231	Heavy Chain	GAGGTTCAGCTGCAGCAGTCTGGGGCTGAGCTTGTGAGGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGCTTCTGGCTTTAACATTAAAGACGACTATATACACTGGGTGAAGCAGAGGCCTGA ACAGGGCCTGGAGTGGATTGGATGGATTGACCCTGAGAATGGTGATACTAAATATGCCTCGAAGTTCCCGGGCAAGGCCACTATGACAGCAGACACATCCTCCAACACAGCCTACCTGCAGCTCA GCAGCCTGACATCTGAGGACACTGCCGTCTATTACTGTACTGCATCCAGGACTACGGCCCTTGACTACTGGGGCCCAGGCACCACTCTCACAGTCTCCTCA	229
SC37.232	Heavy Chain	GAGGTTCAGCTGCAGCAGTCTGGGGCTGAGCTTGTGAGGCCAGGGGCCTCAGTCAAGTTGTCCTGCACAGCTTCTGGCTTTAACATTGAGGCCGACTATATGCACTGGGTGAAGCAGAGCCCTGA ACAGGGCCTGGAGTGGATTGGATGGATTGATCCTGAGATTGGTGCTACTGAATATGCCTCGAAGTTCCAGGGCAAGGCCACTATGACAGCAGACACATCCTCCAACACAGCCTACCTGCAGCTCA GCAGCCTGACATCTGAGGACACTGGCGTCTATTACTGTATTACAGATGGTAACTACGTGAAGGGCTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	231
SC37.233	Light Chain	GATATCCAGATGACACAGACTACATCCTCCCTGTCTGCCTCTCTGGGAGACAGAGTCACCATCAGTTGCAGTGCAAGTCAGGGCATTAGCAATTATTTAAACTGGTATCAGCAGAAACCAGATGG AACTGTTAAACTCCTGATCTATTACACATCAAGTTTACACTCAGGAGTCCCATCGAGGTTCAGTGGCAGTGGGTCTGGGACAGATTATTCTCTCACCATCAGCAACCTGGAACCTGAAGATATTG CCACTTACTATTGTCAGCAGTATAGAAAGCTTCCGTACACGTTCGGAGGGGGGACCAAGCTGGAAATAAAA	233
SC37.233	Heavy Chain	CAGGTCCAACTGCAGCAGCCTGGGGCTGAACTGGTGAAGCCTGGGGCTTCAGTGAAGTTGTCCTGCAAGGCTTCTGGCTACACCTTCACCACCTACTATATTTACTGGGTGAAACAGAGGCCTGG ACAAGGCCTTGAGTGGATTGGGGGGATTAATCCTAGAAATGGTGGTACTAACTTCAATGAGAAATTCATGAGCAGGGCCACACTGACTGTAGACAAATCCTCCAGCACAGCCTACATGCAACTCA GCAGCCTGACATCTGAGGACTCTGCGGTCTATTACTGTTCAAGAAGCTTCTACTGGGGCCAAGGCACCACTCTCATTGTCTCCTCA	235

FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.236	Light Chain	GACATTGTGATGTCACAGTCTCCATCGTCCCTAGCTGTGTCAGTTGGAGAGAAGGTTACTATGAGCTGCAAGTCCAGTCAGAGCCTTTTATATAGTAGAAATCAAAAGAACTACTTGGCCTGGTACCAGCAGAAACCAGGGCAGTCTCCTAAACTGCTGATTTACTGGGCATCCACTAGGGAATCTGGGGTCCCTGATCGCTTCACAGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAGTGTGAAGGCTGAAGACCTGGCAGTTTATTACTGTCAGCAATATTATAGCTATTGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	237
SC37.236	Heavy Chain	CAGGTCCAACTGCAGCAGCCTGGGGCTGAGCTGGTGAGGCCTGGGTCTTCAGTGAAGCTGTCCTGCAAGGCTTCTGGCTACACCTTCACCACCTACTGGATGGATTGGGTGAAGCAGAGGCCTGGACAAGGCCTTGAATGGATTGGTAACATTTACCCTTCTGATAGTGAAACTCACTACAATCCAAAGTTCAAGGACAAGGCCACATTGACTGTAGACATATCCTCCAGCACAGCCTACATGCAGCTCAGCAGCCTGACATCTGAGGACTCTGCGGTCTATTACTGTGCACGACATTACTACGCTGGTAGCCCGTTCTACTTTGACTACTGGGGCCAAGGCACCTCTCTCACAGTCTCCTCA	239
SC37.239	Light Chain	GACATTGTGATGTCACAGTCTCCATCCTCCCTAGCTGTGTCAGTTGGAGAGAAGGTTACTATGAGCTGCAAGTCCAGTCAGAGCCTTTTATATAGTACCAATCAAAAGAACTACTTGGCCTGGTACCAGCAGAAACCAGGGCAGTCTCCTAAACTGCTGATTTACTGGGCATCCACTAGGGAATCTGGGGTCCCTGATCGCTTCACAGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAGTGTGAAGGCTGAAGACCTGGCAGTTTATTACTGTCAGCAATATTATAACTATCTCACGTTCGGTGCTGGGACCAAGCTGGAGCTGAAA	241
SC37.239	Heavy Chain	CAGGTTTCTCTGAAAGAGTCGGGCCCTGGGATATTGCAGCCCTCCCAGACCCTCAGTCTGACTTGTTCTTTCTCTGGGTTTTCACTGAGCAGTTCTGGTATGGCTGTAGGCTGGATTCGTCAGCCTTCAGGGAAGGGTCTGGAGTGGCTGGCAAACATTTGGTGGGATGATGATAAGCACTATAACGCAGCCCTGAAGAGCCGGCTCACAATCTCCAAGGATACCTCCAAAAACCAGGTATTCCTCAAGATCGCCAGTGTGGACACTGCAGATACTGCCACATACTACTGTGCTCGAACGGGTGACTTGCGGGCCTACTTTGACTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	243
SC37.243	Light Chain	GATGTTTTGATGACCCAAACTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCCATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAATGGAAACACCTATTTAGAATGGTACCTGCAGAAACCAGGCCAGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTTTCTGGGGTCCCAGACAGGTTCAGTGGCAGTGGATCAGGGACAGATTTCACACTCACGATCAGCAGAGTGGAGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTCACATGTTCCGCTCACGTTCGGTGCTGGGACCAAGCTGGAGCTGAAA	245
SC37.243	Heavy Chain	GATGTGCAGCTTCAGGAGTCAGGACCTGACCTGGTGAAACCTTCTCAGTCACTTTCACTCACCTGCACTGTCACTGGCTACTCCATCACCAGTGGTCTTGGCTGGCACTGGATCCGGCAGTTTCCAGGATACAAACTGGAGTGGATGGGCTACATAAGCTACAGTGGTAGTAATAACTACAATCCATCTCTCAAAAGTCGAATCTCTATCACTCGAGACACATCCAAGAACCAGTTCTTCCTGCAGTTGAATTCTGTGACTAATGAGGACACAGCCACATATTACTGTGCAAGCCATGGTGACGGTGTCTGGGGCGCAGGGACCACGGTCACCGTCTCCTCA	247

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FIG. 7C Cont.

Anti-RNF43 Mouse Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
SC37.244	Light Chain	GATGTTTTGATGACCCAAACTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCCATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAATGGAAACACCTATTTAGAATGGTACCT GCAGAAACCAGGCCAGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTTTCTGGGGTCCCAGACAGGTTCAGTGGCAGTGGATCAGGGACAGATTTCACACTCAAGATCAGCAGAGTGG AGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTCACATGTTCCGTGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAA	249
SC37.244	Heavy Chain	CAGGTTCAACTGCAGCAGTCTGGAGCTGAGCTGGCGAGGCCTGGGGCTTCAGTGAAGCTGTCCTGCAAGGCTTCTGGCTACACCTTCACAAGCTATGGTATAAGCTGGGTGAAGCAGAGAACTGG ACAGGGCCTTGAGTGGATTGGAGAGATTTTTCCTAGAACTGGTAATACTTACTACAATGAGAAGTTCAAGGGCAAGGCCACACTGACTGCAGACAAATCCTCCAGCACAGCGTACATGGAGCTCC GCAGCCTGACATCTGAGGACTCTGCGGTCTATTTCTGTGCAAGAGGGGATTACTACGGTAGTAGCTCCTTTGACTACTGGGGCCAAGGCACCACTCTCACAGTCTCCTCA	251

FIG. 7C Cont.

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Anti-RNF43 Humanized Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
hSC37.2	Light Chain	GATATCCAGATGACCCAGTCTCCTTCTAGCCTTAGCGCCTCAGTGGGCGACCGCGTGACTATCACTTGTAAATCCTCCCAGACATTGCTGTATTACAGCAATCAAAAAAACTATCTTGCC TGGTACCAACAGAAGCCAGGTAAAGTCCCAAAACTGCTGATCTACTGGGCCTCTACCAGAGACAGCGGTGTCCCCTCACGGTTTTCTGGGTCAGGAAGTGGAACCGACTTCACTCTGACA ATCAGTTCCCTGCAGCCTGAGGACGTAGCTACTTATTACTGTCAGCAGTACTATAACTATCCATTGACTTTTGGGCAGGGAACCAAACTGGAAATCAAG	253
hSC37.2	Heavy Chain	GAGGTGCAGTTGGTTGAGTCCGGGGGGGGCCTGGTACAGCCTGGAGGAAGCCTTAGATTGAGCTGTGCAGCCTCTGGGTTCACCTTTTCTGATTTCGATATGGAGTGGGTCCGGCAAGCC CCCGGCAAAGGACTGGAATGGGTCGGTGCCTCCAGGAATAAGGCCAACGATTACACAACCCAATACTCCGCCTCAGTGAAGGGACGATTCACAATCTCACGGGACACCTCTAAAAATAGT CTGTACTTGCAGATGAACAGCCTCAAGACAGAAGATACTGCAGTCTATTATTGCGCTAGAGATCGTTACGACTATGCCCTCGATTATTGGGGCCAGGGTACCACCGTAACAGTCTCATCT	255
hSC37.17	Light Chain	GATATCGTCATGACACAGTCCCCTGACAGCCTGGCCGTGTCCCTGGGCGAACGAGCTACTATCAACTGTCGTGCATCTGAATCCGTAGACTCTTATGGCAATTCATTCATGCACTGGTAT CAGCAGAAACCCGGTCAGCCACCCAAACTGCTGATATACCTCGCTTCCAACCTTGAAAGCGGAGTGCCAGATCGCTTCTCCGGGAGTGGGTCTGGCACTGACTTCACCCTGACTATTTCC AGCCTCCAGGCAGAGGACGTGGCCGTATATTACTGTCAGCAGAACAACGAGGACCCTCTCACCTTTGGGCAGGGCACCAAGGTAGAGATCAAA	257
hSC37.17	Heavy Chain	CAAGTGCAGCTGGTGCAGTCTGGCGCCGAGGTGAAGAAACCAGGCGCCTCTGTCAAGGTGAGTTGCAAGGCATCCGGTTTTAACATCAAGGACACTTATATCCACTGGGTCAGGCAAGCA CCTGGCCAGGGATTGGAATGGATGGGCCGGATTGATCCAGCTAATGGCAAGGCCAACTACGACCCTAAATTCCAGGGGCGTGTTACTATGACCCGCGACACCAGCACCTCCACAGTCTAC ATGGAGCTCAGTTCATTGCGAAGCGAGGATACAGCCGTGTATTACTGCGCTTTGGGTGGCGGATACTATGGAATGGACTACTGGGGACAGGGAACCCTCGTTACTGTTTCCTCA	259
hSC37.39	Light Chain	GAAATAGTAATGACCCAATCTCCCGCCACATTGTCTGTGTCCCCTGGAGAGCGGGCCACCCTGAGTTGTAAGGCATCTCAGAACGTAGGCATCAATGTGGCATGGTACCAGCAGAAACCC GGCCAGGCCCCTCGAGCCCTGATTTACTCCGCAAGCTATCGGTATTCCGGGATACCTGCACGCTTTTCCGGGAGCGGCTCTGGCACCGAGTTCACACTTACAATTTCTTCCCTCCAGAGT GAGGATTTCGCTGTTTACTATTGCCATCAATACAAGACATATCCCTATACATTCGGAGGCGGCACTAAGGTGGAGATCAAG	261
hSC37.39	Heavy Chain	CAGGTGCAGTTGGTGCAGTCTGGGGCAGAAGTGAAGAAGCCAGGAGCCAGTGTAAAGGTGTCTTGCAAAGCAAGTGGCTACACATTCACCACTTATACCATCCACTGGGTAAGGCAGGCT CCCGGACAAGGTCTCGAATGGATGGGGTACATCAATCCTAGGTCCGGCTATACCGAGTATAATCAGAAATTCCAAGACCGTGTCACTATGACCAGGGATACTTCAACATCCACAGTCTAT ATGGAACTGAGCTCCCTGAGAAGTGAGGACACCGCCGTGTATTATTGCGCTAGGTCTTATGAATTTTGGGGACAGGGCACCACTGTTACTGTATCAAGC	263

FIG. 7C Cont.

Anti-RNF43 Humanized Antibody Nucleotide Variable Region

Name	Chain	Nucleic Acid Sequence	SEQ ID NO
hSC37.67	Light Chain	GACATTCAGATGACTCAGTCTCCTAGCTCCTTGTCAGCCTCCGTCGGTGATCGTGTGACAATTACCTGTAAAGCCTCTGAGGACATATATAATAGACTGGCCTGGTATCAGCAAAAGCCTGGGAAGGCCCCAAAGCTGCTGATTTCTGGTGCCACAAGTCTGGAGACTGGCGTTCCTTCCAGGTTTAGCGGAAGTGGAAGTGGCACTGATTATACCCTGACAATCTCCAGCTTGCAGCCCGAAGACTTTGCAACCTACTACTGTCAGCAGAATTGGTCTACTCCCCCTACTTTTGGGGGCGGCACTAAGGTCGAGATCAAG	265
hSC37.67	Heavy Chain	CAGGTGCAACTCGTGCAGAGCGGGGCAGAAGTTAAAAAACCAGGGGCCTCCGTAAAAGTTAGTTGCAAAGCCTCAGGTTACACATTCACAAGGTACTGGATAGAATGGGTCAGACAGGCTCCCGGCCAGCGTCTGGAATGGATGGGCGAGATACTCCCAGGGTCTGGTTCAACCAACTACAACGAGAAGTTCAAGGGGCGCGTGACTATTACCGCGGACACAAGCGCCTCAACCGCTTACATGGAGCTGAGTAGTCTGCGAAGCGAGGATACAGCTGTCTACTACTGTGAGCGCAGGGGGGCCTACTGGGGGCAGGGCACTCTTGTGACAGTCTCCTCT	267
hSC37.67 variant 1	Light Chain	GACATTCAGATGACTCAGTCTCCTAGCTCCTTGTCAGCCTCCGTCGGTGATCGTGTGACAATTACCTGTAAAGCCTCTGAGGACATATATAATAGACTGGCCTGGTATCAGCAAAAGCCTGGGAAGGCCCCAAAGCTGCTGATTTCTGGTGCCACAAGTCTGGAGACTGGCGTTCCTTCCAGGTTTAGCGGAAGTGGAAGTGGCACTGATTATACCCTGACAATCTCCAGCTTGCAGCCCGAAGACTTTGCAACCTACTACTGTCAGCAGCAGTGGTCTACTCCCCCTACTTTTGGGGGCGGCACTAAGGTCGAGATCAAG	269

FIG. 7C Cont.

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Anti-RNF43 Humanized Antibody Full Length Amino Acid Sequences

Name	Chain	Full Sequence	SEQ ID NO
hSC37.2	Light Chain	DIQMTQSPSSLSASVGDRVTITCKSSQTLLYYSNQKNYLAWYQQKPGKVPKLLIYWASTRDSGVPSRFSGSGSGTDFTLTISSLQPEDVATYYCQQYYNYPLTFGQGTKLEIKRTVAAPSV FIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC	271
hSC37.2	Heavy Chain	EVQLVESGGGLVQPGGSLRLSCAASGFTFSDFDMEWVRQAPGKGLEWVGASRNKANDYTTQYSASVKGRFTISRDTSKNSLYLQMNSLKTEDTAVYYCARDRYDYALDYWGQGTTVTVSSA STKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGGPS VFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTK NQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG	272
hSC37.17	Light Chain	DIVMTQSPDSLAVSLGERATINCRASESVDSYGNSFMHWYQQKPGQPPKLLIYLASNLESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCQQNNEDPLTFGQGTKVEIKRTVAAPSVFI FPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC	273
hSC37.17	Heavy Chain	QVQLVQSGAEVKKPGASVKVSCKASGFNIKDTYIHWVRQAPGQGLEWMGRIDPANGKANYDPKFQGRVTMTRDTSTSTVYMELSSLRSEDTAVYYCALGGGYYGMDYWGQGTLVTVSSAST KGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGGPSVF LFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQ VSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG	274
hSC37.17ss1	Heavy Chain	QVQLVQSGAEVKKPGASVKVSCKASGFNIKDTYIHWVRQAPGQGLEWMGRIDPANGKANYDPKFQGRVTMTRDTSTSTVYMELSSLRSEDTAVYYCALGGGYYGMDYWGQGTLVTVSSAST KGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSSDKTHTCPPCPAPELLGGPSVF LFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQ VSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG	275

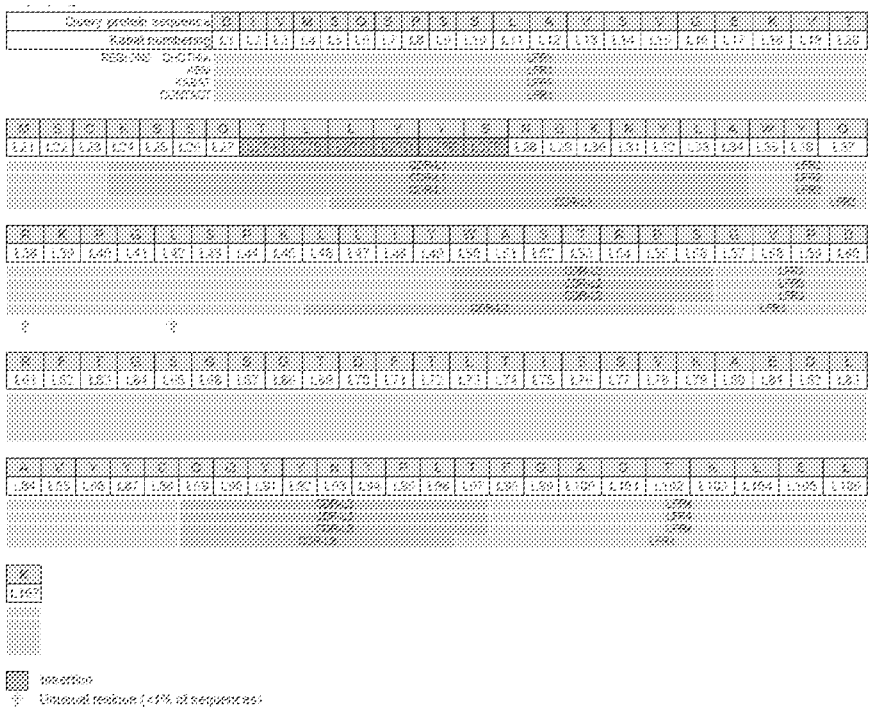
FIG. 7D

Anti-RNF43 Humanized Antibody Full Length Amino Acid Sequences

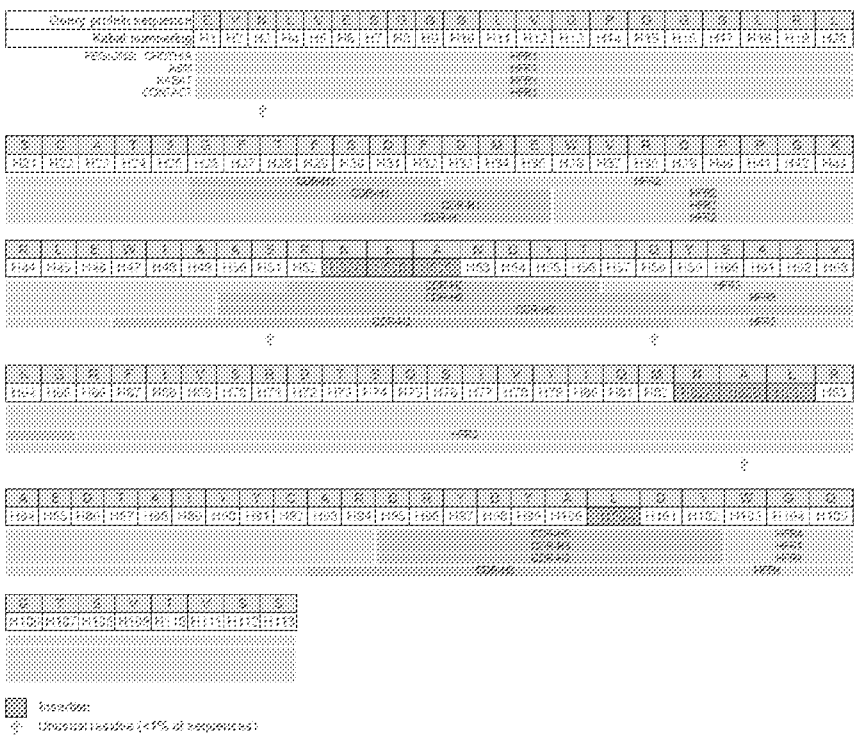
Name	Chain	Full Sequence	SEQ ID NO
hSC37.39	Light Chain	EIVMTQSPATLSVSPGERATLSCKASQNVGINVAWYQQKPGQAPRALIYSASYRYSGIPARFSGSGSGTEFTLTISSLQSEDFAVYYCHQYKTYPYTFGGGTKVEIKRTVAAPSVFIFPPS DEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC	276
hSC37.39	Heavy Chain	QVQLVQSGAEVKKPGASVKVSCKASGYTFTTYTIHWVRQAPGQGLEWMGYINPRSGYTEYNQKFQDRVTMTRDTSTSTVYMELSSLRSEDTAVYYCARSYEFWGQGTTVTVSSASTKGPSV FPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPK PKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTC LVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG	277
hSC37.39.ss1	Heavy Chain	QVQLVQSGAEVKKPGASVKVSCKASGYTFTTYTIHWVRQAPGQGLEWMGYINPRSGYTEYNQKFQDRVTMTRDTSTSTVYMELSSLRSEDTAVYYCARSYEFWGQGTTVTVSSASTKGPSV FPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSSDKTHTCPPCPAPELLGGPSVFLFPPK PKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTC LVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG	278
hSC37.67	Light Chain	DIQMTQSPSSLSASVGDRVTITCKASEDIYNRLAWYQQKPGKAPKLLISGATSLETGVPSRFSGSGSGTDYTLTISSLQPEDFATYYCQQNWSTPPTFGGGTKVEIKRTVAAPSVFIFPPS DEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC	279
hSC37.67	Heavy Chain	QVQLVQSGAEVKKPGASVKVSCKASGYTFTRYWIEWVRQAPGQRLEWMGEILPGSGSTNYNEKFKGRVTITADTSASTAYMELSSLRSEDTAVYYCERRGAYWGQGTLVTVSSASTKGPSV FPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPK PKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTC LVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG	280
hSC37.67 variant 1	Light Chain	DIQMTQSPSSLSASVGDRVTITCKASEDIYNRLAWYQQKPGKAPKLLISGATSLETGVPSRFSGSGSGTDYTLTISSLQPEDFATYYCQQQWSTPPTFGGGTKVEIKRTVAAPSVFIFPPS DEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC	281

FIG. 7D Cont.

CDRs of SC37.2 Light and Heavy Chain Variable Regions



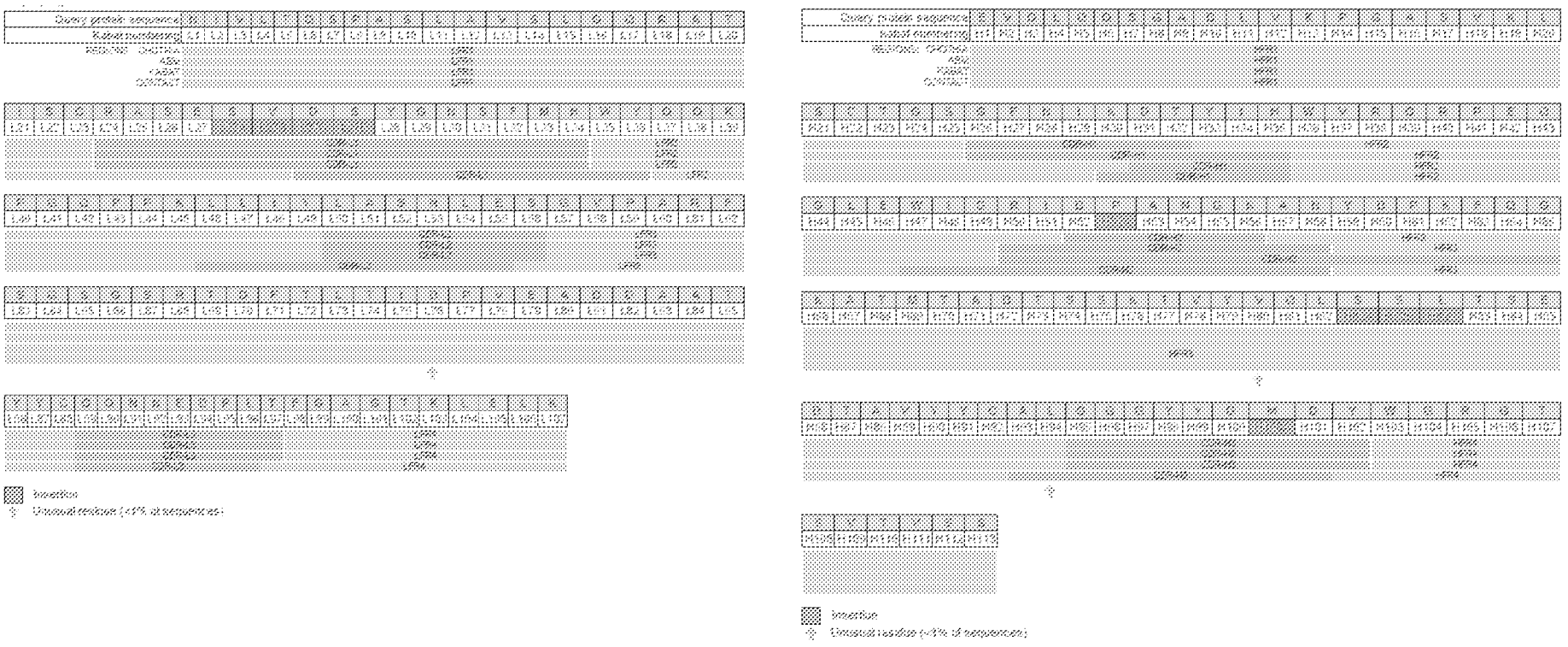
Light Chain



Heavy Chain

FIG. 7E

CDRs of SC37.17 Light and Heavy Chain Variable Regions

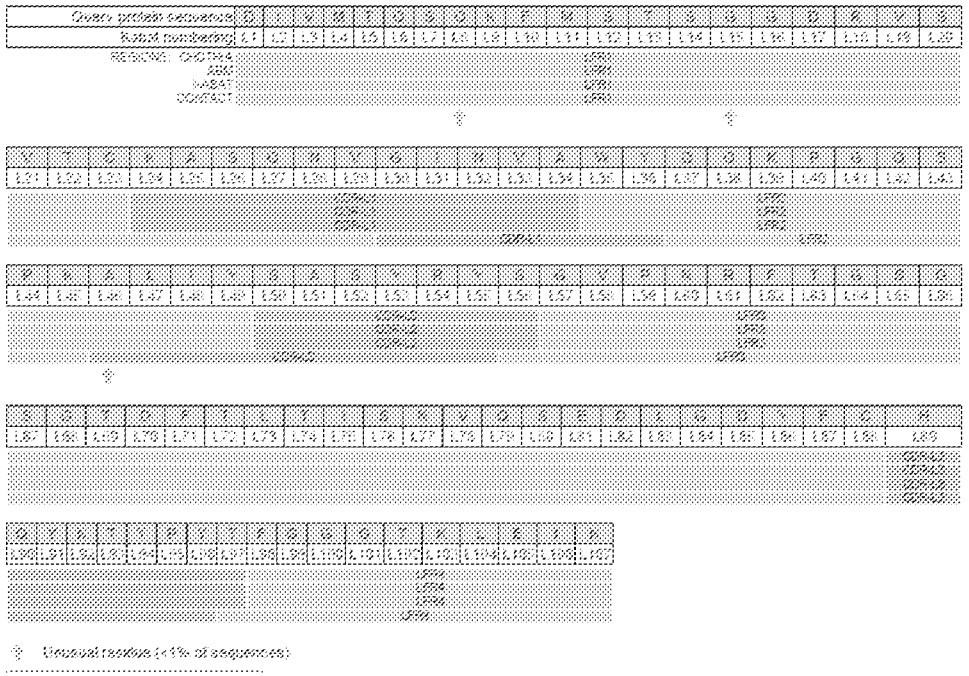


Light Chain

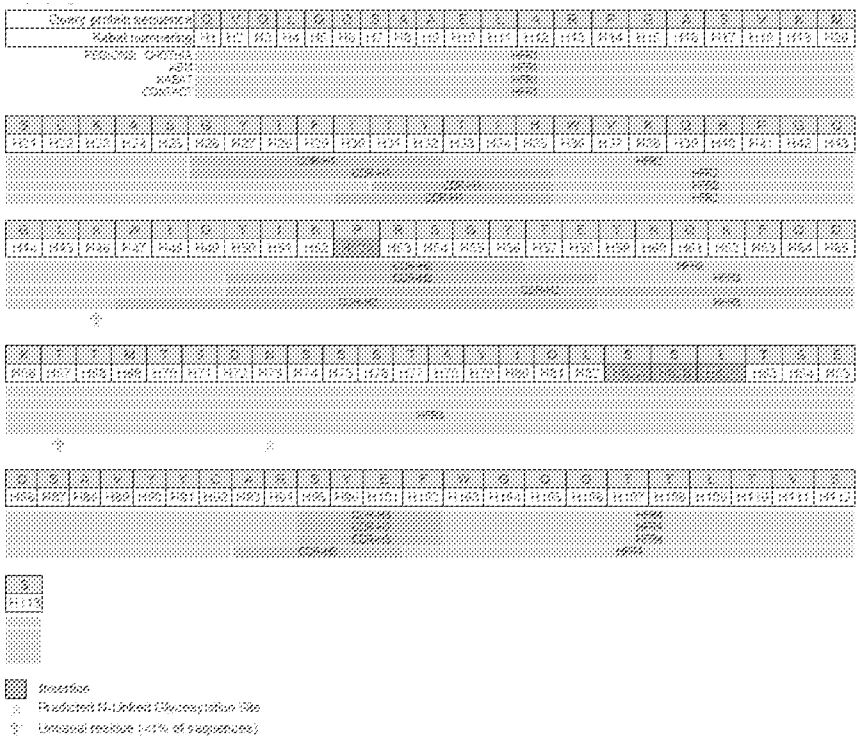
Heavy Chain

FIG. 7F

CDRs of SC37.39 Light and Heavy Chain Variable Regions



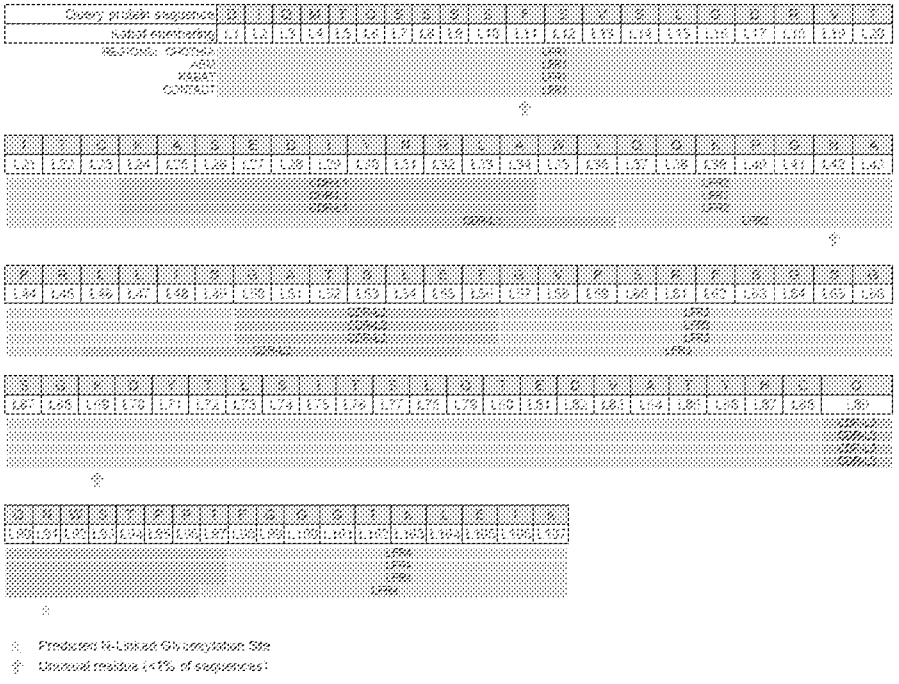
Light Chain



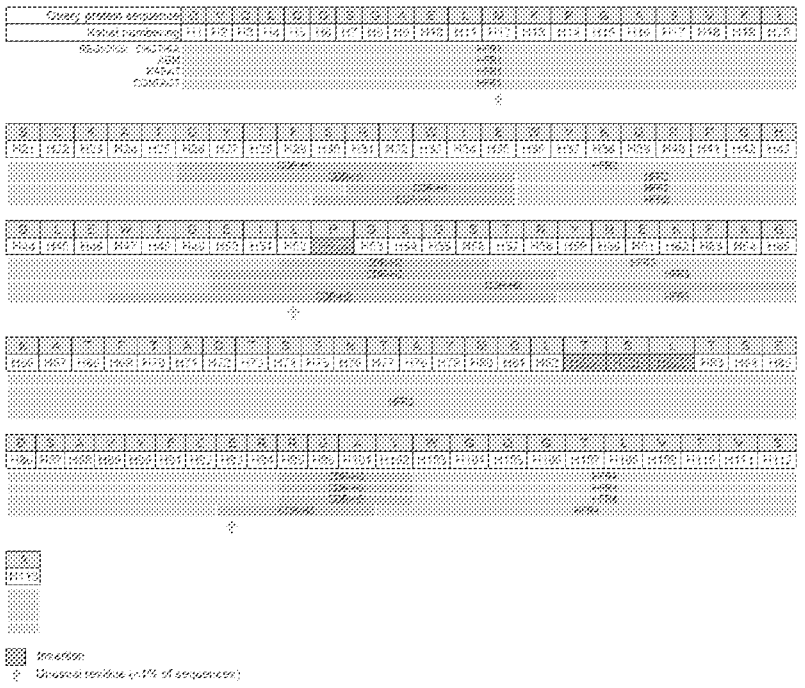
Heavy Chain

FIG. 7G

CDRs of SC37.67 (identical to SC37.45) Light and Heavy Chain Variable Regions



Light Chain



Heavy Chain

FIG. 7H

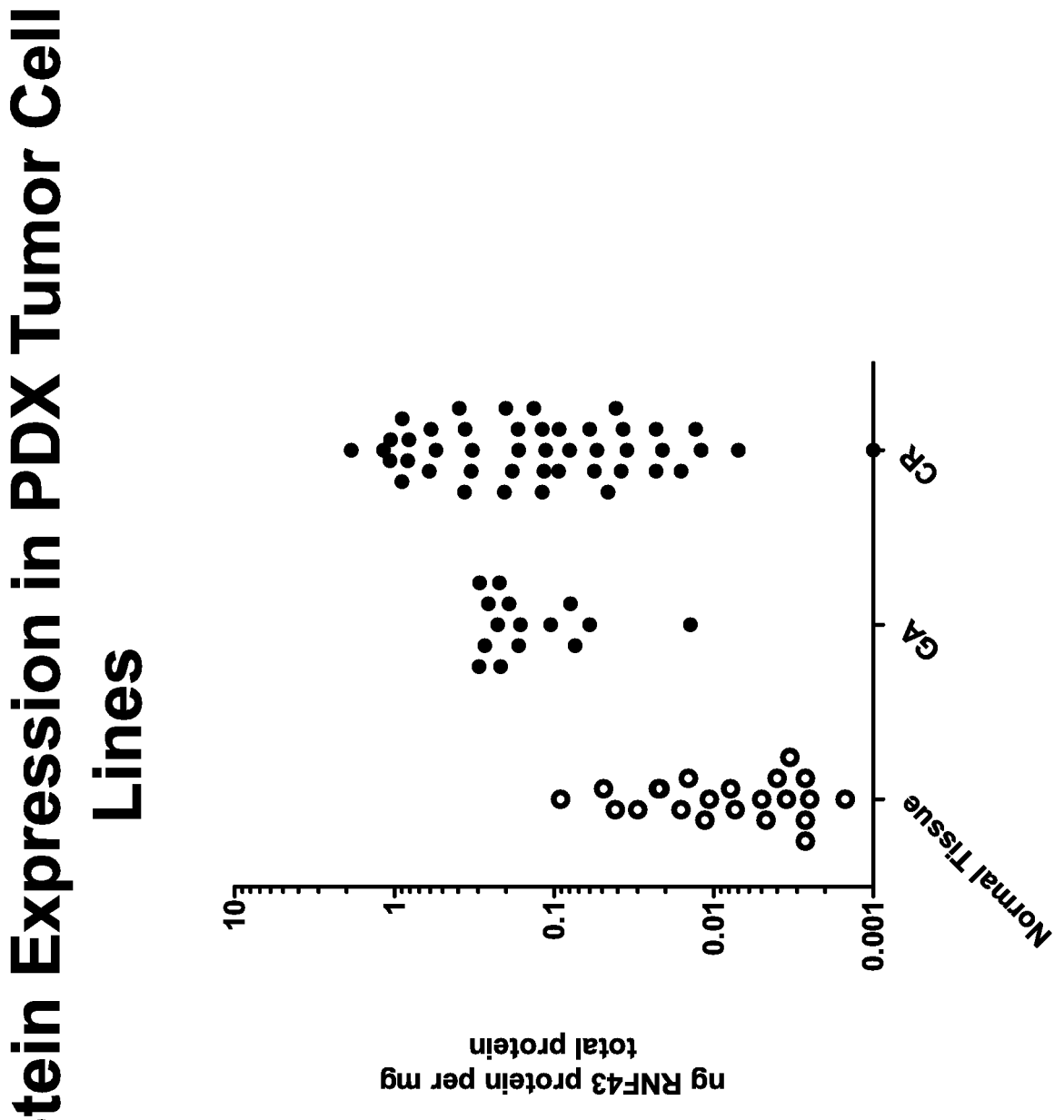

RNF43 Protein Expression in PDX Tumor Cell Lines
ng RNF43 protein per mg total protein
10
1
0.1
0.01
0.001
Normal Tissue
GA
CR

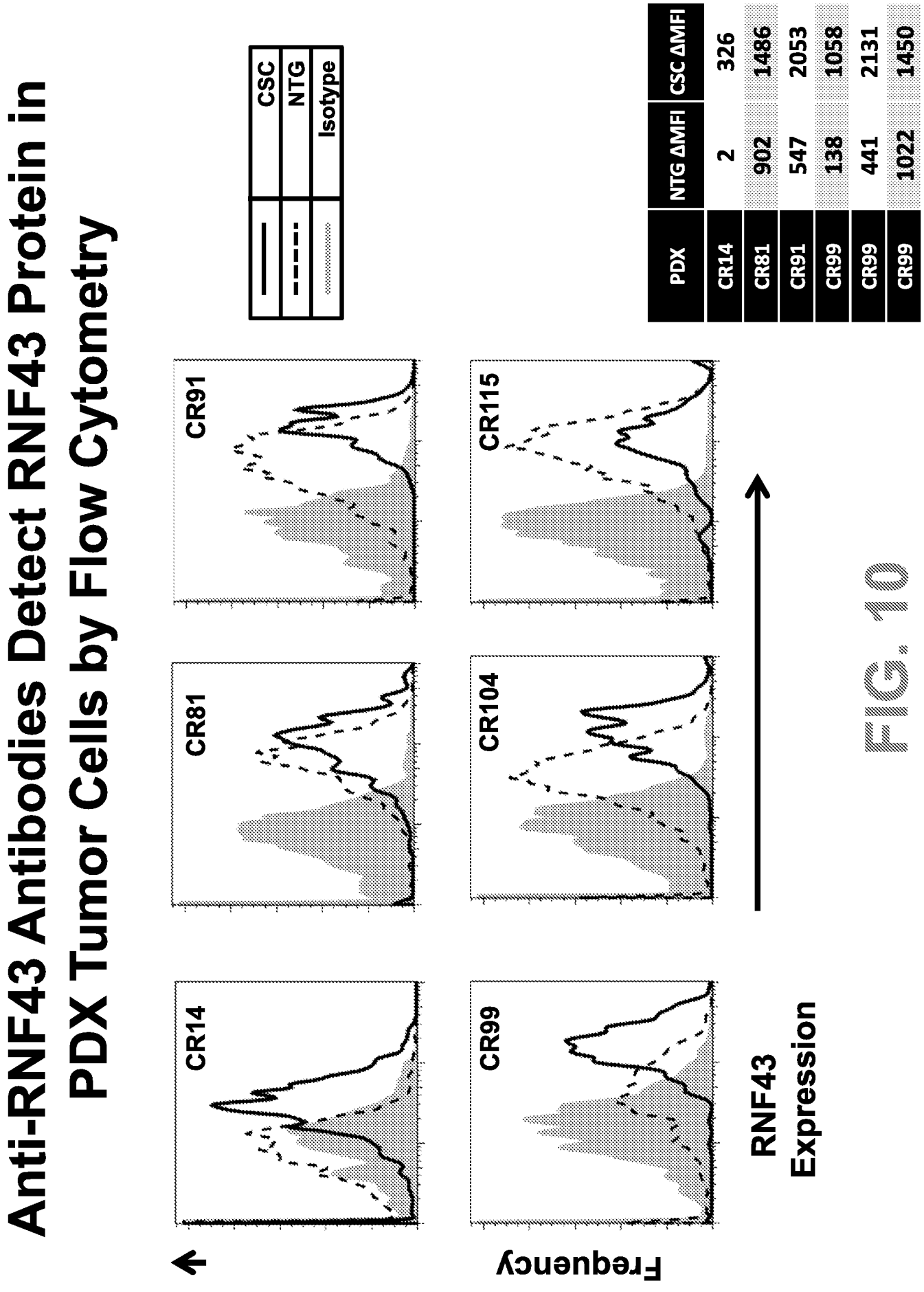
FIG. 8

RNF43 RNA Expression in PDX Tumor Cell Lines using *In Situ* Hybridization

	RNF43 Expression
CR118p0	1
CR119p0	1
CR120p0	4
CR121p0	4
CR122p0	4
CR123p0	4
CR124p0	4
CR125p0	3
CR126p0	4
CR127p0	4
CR129p0	4
CR130p0	1
CR131p0	4
CR132p0	2
CR133p0	2
CR134p0	4
CR135p0	2
CR139p0	3
CR140p0	2
CR141p0	4
CR142p0	2

# of RNF43^{+} PDX lines/ Total # PDX lines tested	Score	%
11 / 21	4	52.3
2 / 21	3	9.5
5 / 21	2	23.8
3 / 21	1	14.3

FIG. 9



PDX	NTG ΔMFI	CSC ΔMFI
CR14	2	326
CR81	902	1486
CR91	547	2053
CR99	138	1058
CR99	441	2131
CR99	1022	1450

FIG. 10

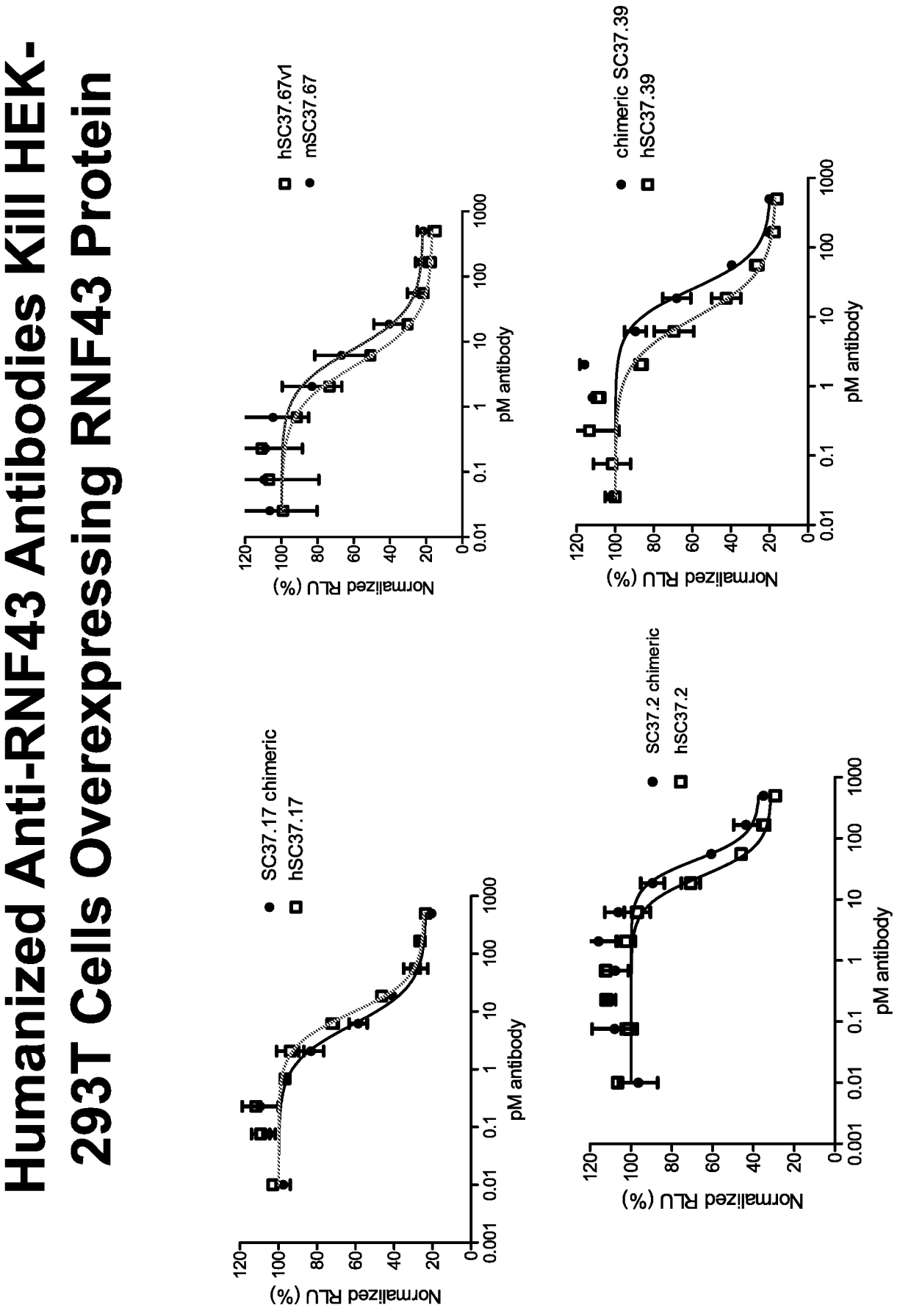

Humanized Anti-RNF43 Antibodies Kill HEK-293T Cells Overexpressing RNF43 Protein
hSC37.67v1
mSC37.67
chimeric SC37.39
hSC37.39
SC37.17 chimeric
hSC37.17
SC37.2 chimeric
hSC37.2
Normalized RLU (%)
pM antibody

FIG. 11