

Library Registration Form

Library Number	RMK017
Library Name	Immune Checkpoint Molecule (ICM) Library
Old Document Name	2021-01-25 Targeting Sequences for ICM
Library Purpose	CRISPR/Cas9 Knockout of immune checkpoint molecules in mouse T-cells.
Vector	pMx-U6-gRNA-PGK-MTAGBFP2 (Modified Retrovirus)
Location	U2216, -20°C Freezer,
Designer Name	Wentao/Kate
Designing Date	Jan-21
Design Reference	Target sequences from Brie and Gecko
Usage Reference	n/a
Species	Mouse (<i>Mus musculus</i>)
Total Gene #	42
Total Target #	214
Gene Group	
1. Negative Controls	(Nontargeting controls from BRIE library)10
2. Positive Controls	n/a
3. Checkpoint genes	42
Target Number	
1. Negative Controls	10*1 = 10
2. Positive Controls	n/a
3. Checkpoint genes	204

Note: Cd70 has 8 targets, Tnfrsf9 has 10 targets.

Number	Target Gene Symbol	sgRNA.Target.Sequence
1	Ctla4	TGTGATGGTGAATATTCACA
2	Ctla4	GGACTGAGAGCTGTTGACAC
3	Ctla4	ACAGGTGACCCAACCTTCAG
4	Ctla4	TGCCACAAAGTATGGCGGT
5	Cd28	TCGGCATTGAGCGAAACTG
6	Cd28	GCTTGTGGTAGATAGCAACG
7	Cd28	CAAGGGCGTGAACAGCGACG
8	Cd28	TTCCTACAACCTTCTCGCAA
9	Cd48	ATACGTTTATATGGTCCAAG
10	Cd48	TCACCTGAGGCTATCGTGTG
11	Cd48	GAACGAGTTGAAGATAACCC
12	Cd48	CCTTGAAATCCAGTTCCCAA
13	Cd80	TGAGGAGAGTTGTAACGGCA
14	Cd80	GAAATTGTCGTATTGATGCC
15	Cd80	CTGGCAAAAACATGACAAAG
16	Cd80	TGCCCCGGTCTGAAAGGACC
17	Cd86	AGTGTGAATGCCAAGTACCT
18	Cd86	TTGACCTGCACGTCTAAGCA
19	Cd86	TCTGCCGTGCCATTTACAA
20	Cd86	TGGAGGATAATTGATCCTGT
21	Cybb	CCTCTACAAAACCATTCCGG
22	Cybb	TTACCAGACGAATTGTACG
23	Cybb	ATTCTAACTTGGATACCTTG
24	Cybb	TTATACTCGAAAACCTCTTG
25	Ido1	TAGGGAACAGCAATATTGCG
26	Ido1	CATACCCAGACAGATATATG
27	Ido1	CTACTGCACTGGATACAGTG
28	Ido1	TCGGGGTCACATACCCATTG
29	Il2rb	GGACCTCCTTGACATAAATG
30	Il2rb	TCTCCGTGAGCACTTCCAG
31	Il2rb	AAGCTCAACGAAACAATACC
32	Il2rb	AGGTATCTGAGCCATGACAT
33	Cd47	ATCAGCCTGTTCTTACGAGG
34	Cd47	GGATAAGCGCGATGCCATGG
35	Cd47	CACTTCATGCAATGAAACTG
36	Cd47	GAATGATTCTTATTTCGTA
37	Lag3	GATCCTAACTTTCTACGAAG
38	Lag3	GAGAGAAGTCCCCGCGCTGG
39	Lag3	TCAGCAGCGTACACTGTCAG
40	Lag3	GTTTCAGCTAAAAAATGACG
41	Lgals9	TTTACTGGACCAATCCAAGG
42	Lgals9	GGTGCTGTGAACCATATGGA
43	Lgals9	CCGCGTACCCTACCACCTCG
44	Lgals9	ACACGAAGCAGAACGGACAG
45	Cd244	AAAGATACATTTGACCAACT
46	Cd244	CTGCTGGAGATCACCAACAC

Number	Target Gene Symbol	sgRNA.Target.Sequence
47	Cd244	AGTGCCCCCACTTACTCGAA
48	Cd244	GTGAGCTACGCTTTGTACAG
49	Pdcd1	CAATACAGGGATACCCACTA
50	Pdcd1	GACACACGGCGCAATGACAG
51	Pdcd1	CAGCTTGTCCAAGTGGTCGG
52	Pdcd1	GCTCAAACCATTACAGAAGG
53	Sirpa	TAATTCTAAGGTCATCTGCG
54	Sirpa	TGGAGAATGGAAACGTATCA
55	Sirpa	GGAACAGAGGTCTATGTACT
56	Sirpa	CACCTGGTTCATTGACGTCG
57	Tnfrsf18	GCCAAACACAATATCCCCTG
58	Tnfrsf18	GTCACACCTGAGTACCACTG
59	Tnfrsf18	GCAGTGACCGTCACGACCTG
60	Tnfrsf18	TTATTCTTGTCCAGGCAAGG
61	Cd40	ATTCGCCTGAGTCACATGGG
62	Cd40	GGGATGACAGACGGTATCAG
63	Cd40	AGTCAGACTAATGTCATCTG
64	Cd40	CTGCACCAGCAAGGATTGCG
65	Cd27	TCTCTCCAGACTACCACACC
66	Cd27	TGCTGCATACCTGTGCCATG
67	Cd27	AGACAAACACTACTGGACTG
68	Cd27	CTCAGGTACATTCTTTGTGA
69	Tnfrsf9	GTGCATACGTACTTCGTCCA
70	Tnfrsf9	TGTGCTTAAGACCGGGACCA
71	Tnfrsf9	CCAAGTACCTTCTCCAGCAT
72	Tnfrsf9	ACCAGGCTGACAGTTATCAC
73	Tnfrsf9	TGCACTCACACTCCGCGTTG
74	Tnfrsf9	TTAATGACCAGAACGGTAC
75	Tnfrsf9	ACCAGGCTGACAGTTATCAC
76	Tnfrsf9	AGGTTGCAAAACCTGTAGCT
77	Tnfrsf9	TGGCCAGGAGCTAACGAAGC
78	Tnfrsf9	GGGAAACAAGTGTACAACG
79	Cd40lg	TATTTCAAACAGGTCTGAAG
80	Cd40lg	AAGCTAAAGAGATGCAACAA
81	Cd40lg	TTATACCATGAAAAGCAACT
82	Cd40lg	TGAACTGTGAGGAGATGAGA
83	Cd70	TTGGGAAGGTCCTTCACACA
84	Cd70	AGCTGTAACCTCAGCTGTGTG
85	Cd70	AAGGACCCACACTGCGCTG
86	Cd70	CATCTGCGTATCCATCAAGA
87	Cd70	TTGGGAAGGTCCTTCACACA
88	Cd70	AGCTGTAACCTCAGCTGTGTG
89	Cd70	AAGGACCCACACTGCGCTG
90	Cd70	CATCTGCGTATCCATCAAGA
91	Tnfsf9	GGGAGCTCATACCTATCTCA
92	Tnfsf9	AAAAATACGTAGTAGAGCCC

Number	Target Gene Symbol	sgRNA.Target.Sequence
93	Tnfsf9	GGTTAATGTTCTGGGATCGCG
94	Tnfsf9	AGTGTTGGGGCAGCCAATGT
95	Tnfrsf4	GAGCCGCTGTGATCATACCA
96	Tnfrsf4	TCACACTTGGAGTTACAGCA
97	Tnfrsf4	TTCCAGATAAGGTACAACCTG
98	Tnfrsf4	GTAGACCAGGCACCCAACCT
99	Tnfsf4	GAATGAGTATCAAACCTATGG
100	Tnfsf4	ACTGGTGCATCTTACCGGAG
101	Tnfsf4	AGATGGGATTATGATCCTCC
102	Tnfsf4	CGGTTGTCATCAAGTGCGAT
103	Ceacam1	ATAGTAATATGAATTTACG
104	Ceacam1	AAGCAACAACCTCCAATCCCG
105	Ceacam1	TTGTTGTCTTCAGCAACCTG
106	Ceacam1	AGCTCTTGGGAGGATGCATG
107	Icosl	GGACAATAGCCTAATAGACA
108	Icosl	AGAGACTGAAGTCGGTGCAA
109	Icosl	TGGCTGTATTCATAAATACC
110	Icosl	TCCCTGGACTCCATGAAGCA
111	Tnfsf14	GAGTACACATAGTAGTAACC
112	Tnfsf14	AGACGGACATCCCATTGAGG
113	Tnfsf14	CAGGAGAAACCAGCCCTGAG
114	Tnfsf14	TCCACCAATACCTATCAAGC
115	Pvr	AGGTCAGGGTCAAGTTAGTG
116	Pvr	AACTTAAGTGTAGAAGACGA
117	Pvr	GAAGACAGCCACAAGAGCGT
118	Pvr	GCTAAATGCATCTCTGCCAA
119	Icos	TGGTCTTGGTGAGTTCGCAG
120	Icos	TATGCAAATATCCTCCACTA
121	Icos	GCAGAAGTAATAGCTTCCCT
122	Icos	AAATGAAAACATCCTATGAT
123	Cd160	ATTGTGAACTTCCAACATGG
124	Cd160	AAGCTACACCATCAGACAGT
125	Cd160	ACAAGAAAGACGAAGCTGAG
126	Cd160	TGTGCCACAAAGTACAGGTG
127	Cd226	TCCCATATGACTTGTTCAC
128	Cd226	GGCCAGTGCAACAAGTCATA
129	Cd226	GAATTCCACTTAAAGAGCCC
130	Cd226	TGAAACTAACCTCCAACGA
131	Cd226	GCTATTCTTCATGTGCACAA
132	Cd226	CAGAGATGGCTTATGTTACT
133	Btla	CAGTGCAACTTACTATTACG
134	Btla	CTCGTAATAGTAAGTTGCAC
135	Btla	AAGAATTCCTAAATAACCG
136	Btla	CCAGATGCCACCAATGCCTC
137	Btla	TAAAGCAGCCAAGTCTGCC
138	Btla	TCTTAGTAGCTTTCTCACAA

Number	Target Gene Symbol	sgRNA.Target.Sequence
139	Pdcd1lg2	CACACTGCTGCCGACGTCTA
140	Pdcd1lg2	GAAGTGTACACCGTAGACGT
141	Pdcd1lg2	TGACCTGGTAGAGGCCTTCG
142	Pdcd1lg2	AACCCAAAGTCCCCAGAACG
143	Pdcd1lg2	AGGCTTGAGGCGCAGAACAC
144	Pdcd1lg2	CACCATCGCTTTGATCTTCC
145	Cd274	GTATGGCAGCAACGTCACGA
146	Cd274	CTGGATCCACGGAAATTCTC
147	Cd274	TCCAAAGGACTTGTACGTGG
148	Cd274	GGACCGTGGACACTACAATG
149	Cd274	GGATGATCAGCTCCGCTGTG
150	Cd274	TTAGTGAGAATGCTAGATG
151	Cd276	GCGCGTCCGAGTAACCGACG
152	Cd276	ATCGAACAAGCCCCGCTCGT
153	Cd276	CCCAACAAGGACCTACGTCC
154	Cd276	TCGGACGCGCTGCAGCCTCA
155	Cd276	CCTTGTAGGTGCCGAGGACC
156	Cd276	TTCTCCAGCACACGAAAGCC
157	Adora2a	TCTGGCGGCGGCTGACATCG
158	Adora2a	TCGCCATCCGAATTCCACTC
159	Adora2a	AGCGAGTCCGCTCCCCTGGT
160	Adora2a	CGTGGTACCCATGAATTACA
161	Adora2a	AGCACACAAGCACGTTACCC
162	Adora2a	TGTCGATGGCAATAGCCAAG
163	Vtn1	TTCAGAGAGTTTACGCTGCG
164	Vtn1	GGGGCCATCGCACTCATCAT
165	Vtn1	TGGGCATCTCAAGTCGACCA
166	Vtn1	ATGCCGTTGAGTTTGATGTC
167	Vtn1	AAAGCCAATGATGAGTGCGA
168	Vtn1	TGTTACATCCGCACCTCAA
169	Tnfsf18	AGTTCATAAACCCCTCCTAT
170	Tnfsf18	CTCACCAAACCTTAACCATGC
171	Tnfsf18	TGTGTGAATACGACATCTGA
172	Tnfsf18	AACTGCCATCGAGTCCTGCA
173	Tnfsf18	ACTGATCTATACTTCACTCA
174	Tnfsf18	TGAGAGAATCAAGTCCTCAA
175	Kir3dl1	CATAACTTGGCCAGGCAGAT
176	Kir3dl1	GAAGGGGTGCCTCGGGGACA
177	Kir3dl1	GCAGGCATCCCCTGTCCCCG
178	Kir3dl1	CCTGCATGTTCTGTTGTCAC
179	Kir3dl1	ACTGGAGTCTGACCATTCAT
180	Kir3dl1	TCACATGTCAGCTACTCAAT
181	Tigit	TTCATTGCTGTATCGAAGAC
182	Tigit	CTGAAGTGACCCAAGTCGAC
183	Tigit	TGTACCTATCATACGTATCC
184	Tigit	CAGGCTGCCTTCCTCGCTAC

Number	Target Gene Symbol	sgRNA.Target.Sequence
185	Tigit	TTCCTCCAAGCGGGGCAGTC
186	Tigit	CAGTTCCAGACTGCCCCGCT
187	Havcr2	TGTTGAGATCGCCCTTTAGC
188	Havcr2	ATCAGTTCTGAGCAACTCGT
189	Havcr2	AGTCTCTGCTGGGTTGACCC
190	Havcr2	CAGAGACTCCCACTCCAATG
191	Havcr2	TTCTCCAAGAACCCTAACCA
192	Havcr2	ACCTGAACCATTTCTCTCCG
193	4632428N05Rik	ACGGTACTTACGGCGGTGAG
194	4632428N05Rik	CTACGGGTCCATGGAGCTAC
195	4632428N05Rik	ATGTGACCATCTACAAGACG
196	4632428N05Rik	CCTTACAGGCATCACGGCTG
197	4632428N05Rik	CGGCGACATGGGTGTCCCCG
198	4632428N05Rik	CTCATTAGACGCCATGCATG
199	Igsf11	AAATGTTTGACGGCGCCCTC
200	Igsf11	TGTACTTACGTGAGATAACC
201	Igsf11	TCCCTCGGCCACGTACCTT
202	Igsf11	CAATGCAAACCAGCCCGAAC
203	Igsf11	CGGTAAATCCTACCCTCCCG
204	Igsf11	TGACGTCACTGCCGAGGTCC
205	BRDN0000738027	AATGCTGCGTACGATAACCG
206	BRDN0000738315	AATTCTGAGATTCCGCGGCT
207	BRDN0000737773	AATTGTCTGATCGCGCCATA
208	BRDN0000737873	AATTTTTTCGGAATCTAGCG
209	BRDN0000738210	ACAACAATTACTGGCCGCGA
210	BRDN0000737517	ACAACACGCCGACACGTCTA
211	BRDN0000737828	ACAATTCGTTTTATGCGCGT
212	BRDN0000738158	ACACAACTGGTCGTAGATG
213	BRDN0000737857	ACACCCGTGTATGCACCGGG
214	BRDN0000737608	ACACGACCGACCGGTGGAAT

Original document: 2021-01-25 Targeting Sequences for ICM

Target Gene Symbol	sgRNA.Target.Sequence
Ctla4	TGTGATGGTGAATATTCACA
Ctla4	GGACTGAGAGCTGTTGACAC
Ctla4	ACAGGTGACCCAACCTTCAG
Ctla4	TGCCACAAAGTATGGCGGT
Cd28	TCGGCATTGAGCGAAACTG
Cd28	GCTTGTGGTAGATAGCAACG
Cd28	CAAGGGCGTGAACAGCGACG
Cd28	TTCCTACAACCTTCTCGCAA
Cd48	ATACGTTTATATGGTCCAAG
Cd48	TCACCTGAGGCTATCGTGTG
Cd48	GAACGAGTTGAAGATAACCC
Cd48	CCTTGAAATCCAGTTCCCAA
Cd80	TGAGGAGAGTTGTAACGGCA
Cd80	GAAATTGTCGTATTGATGCC
Cd80	CTGGCAAAAACATGACAAAG
Cd80	TGCCCCGGTCTGAAAGGACC
Cd86	AGTGTGAATGCCAAGTACCT
Cd86	TTGACCTGCACGTCTAAGCA
Cd86	TCTGCCGTGCCATTACAA
Cd86	TGGAGGATAATTGATCCTGT
Cybb	CCTCTACCAAAACCATTCCGG
Cybb	TTACCAGACGAATTGTACG
Cybb	ATTCTAACTTGGATACCTTG
Cybb	TTATACTCGAAAACCTCTTG
Ido1	TAGGGAACAGCAATATTGCG
Ido1	CATACCCAGACAGATATATG
Ido1	CTACTGCACTGGATACAGTG
Ido1	TCGGGGTACATACCCATTG
Il2rb	GGACCTCCTTGACATAAATG
Il2rb	TCTCCGTCGAGCACTTCCAG
Il2rb	AAGCTCAACGAAACAATACC
Il2rb	AGGTATCTGAGCCATGACAT
Cd47	ATCAGCCTGTTCTTACGAGG
Cd47	GGATAAGCGCGATGCCATGG
Cd47	CACTTCATGCAATGAAACTG
Cd47	GAATGATTCTCTTATTCGTA
Lag3	GATCCTAACTTTCTACGAAG
Lag3	GAGAGAAGTCCCCGCGCTGG
Lag3	TCAGCAGCGTACACTGTCAG
Lag3	GTTTCAGCTAAAAAATGACG
Lgals9	TTTACTGGACCAATCCAAGG
Lgals9	GGTGCTGTGAACCATATGGA
Lgals9	CCGCGTACCCTACCACCTCG
Lgals9	ACACGAAGCAGAACGGACAG
Cd244	AAAGATACATTTGACCAACT

Target Gene Symbol	sgRNA.Target.Sequence
Cd244	CTGCTGGAGATCACCAACAC
Cd244	AGTGCCCCCACTTACTCGAA
Cd244	GTGAGCTACGCTTTGTACAG
Pdcd1	CAATACAGGGATACCCACTA
Pdcd1	GACACACGGCGCAATGACAG
Pdcd1	CAGCTTGTCCAAGTGGTCGG
Pdcd1	GCTCAAACCATTACAGAAGG
Sirpa	TAATTCTAAGGTCATCTGCG
Sirpa	TGGAGAATGGAAACGTATCA
Sirpa	GGAACAGAGGTCTATGTACT
Sirpa	CACCTGGTTCATTGACGTCG
Tnfrsf18	GCCAAACACAATATCCCCTG
Tnfrsf18	GTCACACCTGAGTACCACTG
Tnfrsf18	GCAGTGACCGTCACGACCTG
Tnfrsf18	TTATTCTTGTCCAGGCAAGG
Cd40	ATTCGCCTGAGTCACATGGG
Cd40	GGGATGACAGACGGTATCAG
Cd40	AGTCAGACTAATGTCATCTG
Cd40	CTGCACCAGCAAGGATTGCG
Cd27	TCTCTCCAGACTACCACACC
Cd27	TGCTGCATACCTGTGCCATG
Cd27	AGACAAACACTACTGGACTG
Cd27	CTCAGGTACATTCTTTGTGA
Tnfrsf9	GTGCATACGTA CTTCGTCCA
Tnfrsf9	TGTGCTTAAGACCGGGACCA
Tnfrsf9	CCAAGTACCTTCTCCAGCAT
Tnfrsf9	ACCAGGCTGACAGTTATCAC
Cd40lg	TATTTCAAACAGGT CGAAG
Cd40lg	AAGCTAAAGAGATGCAACAA
Cd40lg	TTATACCATGAAAAGCAACT
Cd40lg	TGAACTGTGAGGAGATGAGA
Cd70	TTGGGAAGGTCCTT CACACA
Cd70	AGCTGTA ACTCAGCTGTGTG
Cd70	AAGGACCC CACTGCGCTG
Cd70	CATCTGCGTATCCATCAAGA
Cd70	TTGGGAAGGTCCTT CACACA
Cd70	AGCTGTA ACTCAGCTGTGTG
Cd70	AAGGACCC CACTGCGCTG
Cd70	CATCTGCGTATCCATCAAGA
Tnfsf9	GGGAGCTCATACTATCTCA
Tnfsf9	AAAAATACGTAGTAGAGCCC
Tnfsf9	GGTTAATGTT CGGGATCGCG
Tnfsf9	AGTGTTGGGGCAGCCAATGT
Tnfrsf4	GAGCCGCTGTGATCATACCA
Tnfrsf4	TCACACTTGGAGTTACAGCA
Tnfrsf4	TTCCAGATAAGGTACA ACTG

Target Gene Symbol	sgRNA.Target.Sequence
Tnfrsf4	GTAGACCAGGCACCCAACCT
Tnfsf4	GAATGAGTATCAAACCTATGG
Tnfsf4	ACTGGTGCATCTTACCGGAG
Tnfsf4	AGATGGGATTATGATCCTCC
Tnfsf4	CGGTTGTCATCAAGTGCAT
Ceacam1	ATAGTAATATGAATTCACG
Ceacam1	AAGCAACAACCTCCAATCCCG
Ceacam1	TTGTTGTCTTCAGCAACCTG
Ceacam1	AGCTCTTGGGAGGATGCATG
Icosl	GGACAATAGCCTAATAGACA
Icosl	AGAGACTGAAGTCGGTGCAA
Icosl	TGGCTGTATTCATAAATACC
Icosl	TCCCTGGACTCCATGAAGCA
Tnfsf14	GAGTACACATAGTAGTAACC
Tnfsf14	AGACGGACATCCCATTCAGG
Tnfsf14	CAGGAGAAAACCGCCCTGAG
Tnfsf14	TCCACCAATACCTATCAAGC
Pvr	AGGTCAGGGTCAAGTTAGTG
Pvr	AACTTAAGTGTAGAAGACGA
Pvr	GAAGACAGCCACAAGAGCGT
Pvr	GCTAAATGCATCTCTGCCAA
Icos	TGGTCTTGGTGAGTTCGCAG
Icos	TATGCAAATATCCTCCACTA
Icos	GCAGAAGTAATAGCTTCCCT
Icos	AAATGAAAACATCCTATGAT
Cd160	ATTGTGAACTCCAACATGG
Cd160	AAGCTACACCATCAGACAGT
Cd160	ACAAGAAAGACGAAGCTGAG
Cd160	TGTGCCACAAAGTACAGGTG
Tnfrsf9	TGCACTCACACTCCGCGTTG
Tnfrsf9	TTTAATGACCAGAACGGTAC
Tnfrsf9	ACCAGGCTGACAGTTATCAC
Tnfrsf9	AGGTTGCAAAACCTGTAGCT
Tnfrsf9	TGGCCAGGAGCTAACGAAGC
Tnfrsf9	GGGAAACAACCTGTTACAACG
Cd226	TCCCATATGACTTGTTCAC
Cd226	GGCCAGTGCAACAAGTCATA
Cd226	GAATTCCACTTAAAGAGCCC
Cd226	TGAAACTAACCCCTCCAACGA
Cd226	GCTATTCTTCATGTGCACAA
Cd226	CAGAGATGGCTTATGTTACT
Btla	CAGTGCAACTTACTATTACG
Btla	CTCGTAATAGTAAGTTGCAC
Btla	AAGAATTCCCTAAATAACCG
Btla	CCAGATGCCACCAATGCCTC
Btla	TAAAGCAGCCAAGTCCTGCC

Target Gene Symbol	sgRNA.Target.Sequence
Btla	TCTTAGTAGCTTTCTCACAA
Pdcd1lg2	CACACTGCTGCCGACGTCTA
Pdcd1lg2	GAAGTGTACACCGTAGACGT
Pdcd1lg2	TGACCTGGTAGAGGCCTTCG
Pdcd1lg2	AACCCAAAGTCCCCAGAACG
Pdcd1lg2	AGGCTTGAGGCGCAGAACAC
Pdcd1lg2	CACCATCGCTTTGATCTTCC
Cd274	GTATGGCAGCAACGTCACGA
Cd274	CTGGATCCACGGAAATTCTC
Cd274	TCCAAAGGACTTGTACGTGG
Cd274	GGACCGTGGACACTACAATG
Cd274	GGATGATCAGCTCCGCTGTG
Cd274	TTAGTGAGAATGCTAGATG
Cd276	GCGCGTCCGAGTAACCGACG
Cd276	ATCGAACAAGCCCCGCTCGT
Cd276	CCCAACAAGGACCTACGTCC
Cd276	TCGGACGCGCTGCAGCCTCA
Cd276	CCTGTAGGTGCCGAGGACC
Cd276	TTCTCCAGCACACGAAAGCC
Adora2a	TCTGGCGGCGGCTGACATCG
Adora2a	TCGCCATCCGAATTCCACTC
Adora2a	AGCGAGTCCGCTCCCCTGGT
Adora2a	CGTGGTACCCATGAATTACA
Adora2a	AGCACACAAGCACGTTACCC
Adora2a	TGTCGATGGCAATAGCCAAG
Vtcn1	TTCAGAGAGTTTACGCTGCG
Vtcn1	GGGGCCATCGCACTCATCAT
Vtcn1	TGGGCATCTCAAGTCGACCA
Vtcn1	ATGCCGTTGAGTTTGATGTC
Vtcn1	AAAGCCAATGATGAGTGCGA
Vtcn1	TGTTACATCCGCACCTCAA
Tnfsf18	AGTTCATAAACCCCTCCTAT
Tnfsf18	CTCACCAAACCTAACCATGC
Tnfsf18	TGTGTGAATACGACATCTGA
Tnfsf18	AACTGCCATCGAGTCCTGCA
Tnfsf18	ACTGATCTATACTTCACTCA
Tnfsf18	TGAGAGAATCAAGTCCTCAA
Kir3dl1	CATAACTTGGCCAGGCAGAT
Kir3dl1	GAAGGGGTGCCTCGGGGACA
Kir3dl1	GCAGGCATCCCCTGTCCCCG
Kir3dl1	CCTGCATGTTCTGTTGTCAC
Kir3dl1	ACTGGAGTCTGACCATTCAT
Kir3dl1	TCACATGTCAGCTACTCAAT
Tigit	TTCATTGCTGTATCGAAGAC
Tigit	CTGAAGTGACCCAAGTCGAC
Tigit	TGTACCTATCATACGTATCC

Target Gene Symbol	sgRNA.Target.Sequence
Tigit	CAGGCTGCCTTCCTCGCTAC
Tigit	TTCCTCCAAGCGGGGCAGTC
Tigit	CAGTTCCAGACTGCCCCGCT
Havcr2	TGTTGAGATCGCCCTTAGC
Havcr2	ATCAGTTCTGAGCAACTCGT
Havcr2	AGTCTCTGCTGGGTTGACCC
Havcr2	CAGAGACTCCCACTCCAATG
Havcr2	TTCTCCAAGAACCCTAACCA
Havcr2	ACCTGAACCATTCTCTCCG
4632428N05Rik	ACGGTACTTACGGCGGTGAG
4632428N05Rik	CTACGGGTCCATGGAGCTAC
4632428N05Rik	ATGTGACCATCTACAAGACG
4632428N05Rik	CCTTACAGGCATCACGGCTG
4632428N05Rik	CGGCGACATGGGTGTCCCCG
4632428N05Rik	CTCATTAGACGCCATGCATG
Igsf11	AAATGTTTGACGGCGCCCTC
Igsf11	TGTACTIONACTGAGATAACC
Igsf11	TCCCTCGGCCACGTACCTT
Igsf11	CAATGCAAACCAGCCCCAAC
Igsf11	CGGTAAATCCTACCCTCCCG
Igsf11	TGACGTCACTGCCGAGGTCC
BRDN0000738027	AATGCTGCGTACGATAACCG
BRDN0000738315	AATTCTGAGATTCCGCGGCT
BRDN0000737773	AATTGTCTGATCGCGCCATA
BRDN0000737873	AATTTTTTCGGAATCTAGCG
BRDN0000738210	ACAACAATTACTGGCCGCGA
BRDN0000737517	ACAACACGCCGACACGTCTA
BRDN0000737828	ACAATTCGGTTTATGCGCGT
BRDN0000738158	ACACAACTGGTCGTAGATG
BRDN0000737857	ACACCCGTGTATGCACCGGG
BRDN0000737608	ACACGACCGACCGGTGGAAT