

Library Number	RMK012
Library Name	Glutamate Metabolism Library
Old Document Name	190628_Glutamate Library
Library Purpose	CRISPR/Cas9 Knockout of genes from glutamate metabolism genes in mouse T cells
Location (Oligos)	Glutamate Screen box in -20 freezer in B3301
Designer Name	Ayaka Sugiura/Kate Beier
Designing Date	2019-06-03
Design Reference	Brie) (Addgene#73632) (Doench et al., 2016)
Usage Reference	Ayaka Sugiura
Species	Mouse (Mus musculus)
Total Gene #	32
Total Target #	138
Gene Group	
1. Negative Controls	10 Nontargeting controls (NTC)
2. Positive Controls	Tsc2
3. Glutamate metabolism genes	32
Target Number	
1. Negative Controls	10*1=10
2. Positive Controls	Tsc2
3. Glutamate metabolism genes	32*4=128

Note: Target selected from KEGG pathways

Number	Target.Gene.Symbol	sgRNA.Target.Sequence
1	Bcat1	TAGAAAAATAAGGTCCCACG
2	Bcat1	CCCCACATTTATCGGAACTG
3	Bcat1	CACAGCGTAGTGCAAAACAG
4	Bcat1	CAAGATCCGATTGTTCCGGC
5	Bcat2	ACGGAACGAGCCTCTACGTG
6	Bcat2	CAGGAACTATGGACCCACTG
7	Bcat2	GTGGAGTGG AATAACAAGGC
8	Bcat2	GCACAGAATGACGTACAGGA
9	Gad1	CTATTCCATAAAGAAAGCCG
10	Gad1	GACATTTGATCGCTCCACCA
11	Gad1	GCGGTTGCATTGACATAAAG
12	Gad1	AGATGAGAGAGATCGTTGGA
13	Gad2	TTCTGATTAATGTGACGAG
14	Gad2	GTATAAGATCTGGATGCACG
15	Gad2	GGCATCGGAAACAAGCTGTG
16	Gad2	GACAGCTGATAAAATATCG
17	Gfpt1	TGTGGCACAAGTTACCACGC
18	Gfpt1	AAGCTGCGGTCTTTCCCGTG
19	Gfpt1	GGAGAGAGGAGCCTTAACTG
20	Gfpt1	TCTGTTGTGAACACAATGAG
21	Gfpt2	CTGCGATACTGTAAGGATCG
22	Gfpt2	TACTGCACTTACAGCCACAG
23	Gfpt2	CACATGTCGGATATAAGACG
24	Gfpt2	AATTAGTGATGATCCCGTTG
25	Glul	GATTACGGGGACAAATGCGG
26	Glul	TGGAAGGCCAACCAATGGG
27	Glul	CTTGCCCAGAGTTACCTGAG
28	Glul	TATTTCTAGAGACCAACTTG
29	Gls	CGACGCGTTCGGCAACAGCG
30	Gls	TGTACATCGCTATGTTGGGA
31	Gls	GATTGCGAACATCTGATCCC
32	Gls	ATATAACTCATCGATGTGTG
33	Glud1	CAGTAGCGGAGATGCGCCCG
34	Glud1	CCGCGGCCAGCATCGTAG
35	Glud1	ACATACAAGTGCCTGTGGT
36	Glud1	GGAAGGAGAGGCTCAACACA
37	Got1	GATCCCCGCAAGGTTAACCT
38	Got1	GTTGGTGATGATACGTAGAT
39	Got1	AGACCTAGAGAAAGATGCGT
40	Got1	CATTCGGCCCTATTGCTACT
41	Got2	TGGAGGTCCCATTTC AACAT
42	Got2	TTTCTGCCCAAACCATCCTG
43	Got2	CATCCTCCTCACCTTCACCA
44	Got2	AGCTCACCTTCCGGACACTG
45	Slc1a5	AATCCCTATCGATTCTGTG
46	Slc1a5	TACAACAGAGTCGTTGATGG

Number	Target.Gene.Symbol	sgRNA.Target.Sequence
47	Slc1a5	GCGGGAGATCAATTCAACCA
48	Slc1a5	GTGGTGTGCAGCCTGATCGG
49	Ctps	ATTGGCCATTAACCACAAGC
50	Ctps	ATACCAGTACGTCATTAACA
51	Ctps	GCCCACAAGAGCGATCGAGC
52	Ctps	TTAATACCCGTAGACGAAGA
53	Ctps2	GGATAGCATCAGTAATATGG
54	Ctps2	TTTGGTGTATTTACCAACCA
55	Ctps2	AAAAACCCACCTGTGGCACA
56	Ctps2	CTTCACAGCCATCTCAATGG
57	Slc1a4	GTCTGCAACCGATTACACAG
58	Slc1a4	TAGAGCCACTCCTAACACCA
59	Slc1a4	GATGCCACCCAGACGCCCGA
60	Slc1a4	ACCCACCAACACTCCCGACA
61	Slc38a2	CCACCAAAGCAGCTTCCACG
62	Slc38a2	CTCAAGACTGCCAACGAAGG
63	Slc38a2	GCAGTGACAATGGAAGAATG
64	Slc38a2	GAGTTGAAGATGAAATAGCG
65	Slc38a4	CCACGGACACAAATAAGACG
66	Slc38a4	GAAGAAGCTAGCCGATTACG
67	Slc38a4	GATCTCGCTGCCTAATGACT
68	Slc38a4	GATGAAGAGGTAGCTTGACA
69	Cad	CGCAGGGGTACCCGACCGTG
70	Cad	AGGATTAGAACCTTTCGTGG
71	Cad	ATGGTGAGTGCCCACCACAA
72	Cad	CTCAGAAACTCTGTTACGGG
73	Slc38a1	ATACTTTGGTGTGCACGCGT
74	Slc38a1	TGCATGGTGTATGAGAAGCT
75	Slc38a1	TCACCATCACCACCAACT
76	Slc38a1	AGATTGGCAGGACGGACGGG
77	Rimklb	ACTATCACTCTGCACCCATG
78	Rimklb	ATGGTGCTGACGGTCGAGCA
79	Rimklb	GTACGAGTCATTGTTGTGGG
80	Rimklb	AAGAATACAAGGGGTCATAG
81	Gpt2	GCGGTGGAGTACGCTGTGCG
82	Gpt2	ACGCTAAGAAACGAGCGCGG
83	Gpt2	GTTCTCTGCATTATCAACCC
84	Gpt2	GGGGATGGGAATCATCACGC
85	Aldh4a1	GTTCAACGCAAAGTTCGCCG
86	Aldh4a1	CGCTCGGCATTGAGTACGG
87	Aldh4a1	CAACTGGTACTGTATATCGG
88	Aldh4a1	ACCTTTATGACAGGGCAACG
89	Gls2	CGTCCGGTACTACCTCGGTG
90	Gls2	GGGGATCGGAATTACGCCAT
91	Gls2	AAAAGCAGGTCACCAAGTCG
92	Gls2	TGAGTCAGGCAGTGTCATGG

Number	Target.Gene.Symbol	sgRNA.Target.Sequence
93	Nags	GGATGAACTAAGGCACAACG
94	Nags	CAGCTACGGTGGCATCGTCG
95	Nags	GACAGCCAGAAGGTGCCGTG
96	Nags	GCTAGCGGCTGTAATGACTG
97	Cps1	TGAGCCTCACAATTCGTGCG
98	Cps1	ATGCAGACCGAATCATCACA
99	Cps1	TACAGTATTCCATGGAAGTG
100	Cps1	GTTGGTGGCATCTCGTGTCG
101	Psat1	TGGAAGGAGTGCTGACTACG
102	Psat1	TGCAAACGAGACTGTGCACG
103	Psat1	CAATACAGAGAATCTTGTGA
104	Psat1	CTTTGTAGTCAAGGACTGAT
105	Gclc	TGTGCCGGTCCTTGACTGCG
106	Gclc	CAATATGAGGAAACGCCGGA
107	Gclc	AGAAACATCCGGCATCGGAG
108	Gclc	TGTAGATGATAGAACACGGG
109	Gclm	TACTTACCCTGACTAAATCG
110	Gclm	GTGCCCGTCCACGCACAGCG
111	Gclm	TAACTCCATCTTCAATCGG
112	Gclm	GCATTTACAGCCTTACTGGG
113	Ppat	ACCTTGGAATCGGACATACG
114	Ppat	ATAAGACGCCCGATGCAGAG
115	Ppat	TGATCACTCTGGGACTCGTG
116	Ppat	AGGGGTGTATGCGAGTAACT
117	Gpt	GTACTATGCGTCATCAACCC
118	Gpt	TTGATGACGCATAGTACTCG
119	Gpt	CCCTACCACGATGGCATCGC
120	Gpt	GTCCGGACTGCTCAGAAGAT
121	BRDN0000737434	AAACTCCCGTGCAACCGAT
122	BRDN0000737467	AAACCTAGCGTAGATTCGGC
123	BRDN0000737505	AAAAAGTCCGCGATTACGTC
124	BRDN0000737609	AAACTCATACTAGCGAATC
125	BRDN0000737637	AAAACGTAATTATACCGAGC
126	BRDN0000737693	AAAACGGCTCGATCGGTGAT
127	BRDN0000737801	AAACCCCGCGCGGAGCGTC
128	BRDN0000737848	AAACGAGGCTGTTTCGTACAC
129	BRDN0000738185	AAAATTGCACCTTCCCGGCC
130	BRDN0000738254	AAAGACGTGCATTACAGCGAG
131	Tsc2	TGAACCACATGGCTATGACG
132	Tsc2	CACAGGGTGATAATGAACAG
133	Tsc2	CAGCTCCAAAGACCCTTGAG
134	Tsc2	CTGATCCTAGCACACATGTG
135	Rheb	AACAACTGAATTGTCAATG
136	Rheb	CCATATCCAACAACCTTGCCA
137	Rheb	TTCAGCTTGTAGACACAGCG
138	Rheb	TCATAGGATACCTATTATGT

Original Doc Name: 190628_Glutamate Library

Target.Gene.Symbol	sgRNA.Target.Sequence
Bcat1	TAGAAAAATAAGGTCCCACG
Bcat1	CCCCACATTTATCGGAACTG
Bcat1	CACAGCGTAGTGCAAAACAG
Bcat1	CAAGATCCGATTGTTCCGGC
Bcat2	ACGGAACGAGCCTCTACGTG
Bcat2	CAGGAACTATGGACCCACTG
Bcat2	GTGGAGTGAATAACAAGGC
Bcat2	GCACAGAATGACGTACAGGA
Gad1	CTATTCCATAAAGAAAGCCG
Gad1	GACATTTGATCGCTCCACCA
Gad1	GCGGTTGCATTGACATAAAG
Gad1	AGATGAGAGAGATCGTTGGA
Gad2	TTCTGATTAAATGTGACGAG
Gad2	GTATAAGATCTGGATGCACG
Gad2	GGCATCGGAAACAAGCTGTG
Gad2	GACAGCTGATTAATAATATCG
Gfpt1	TGTGGCACAAGTTACCACGC
Gfpt1	AAGCTGCGGTCTTTCCCGTG
Gfpt1	GGAGAGAGGAGCCTTAACTG
Gfpt1	TCTGTTGTGAACACAATGAG
Gfpt2	CTGCGATACTGTAAGGATCG
Gfpt2	TACTGCACTTACAGCCACAG
Gfpt2	CACATGTCGGATATAAGACG

Target.Gene.Symbol	sgRNA.Target.Sequence
Gfpt2	AATTAGTGATGATCCCGTTG
Glul	GATTACGGGGACAAATGCGG
Glul	TGGAAGGCCAACCAAATGGG
Glul	CTTGCCCAGAGTTACCTGAG
Glul	TATTTCTAGAGACCAACTTG
Gls	CGACGCGTTCGGCAACAGCG
Gls	TGTACATCGCTATGTTGGGA
Gls	GATTGCGAACATCTGATCCC
Gls	ATATAACTCATCGATGTGTG
Glud1	CAGTAGCGGAGATGCGCCCCG
Glud1	CCGCGGCGCCAGCATCGTAG
Glud1	ACATACAAGTGCCTGTGGT
Glud1	GGAAGGAGAGGCTCAACACA
Got1	GATCCCCGCAAGGTTAACCT
Got1	GTTGGTGATGATACGTAGAT
Got1	AGACCTAGAGAAAGATGCGT
Got1	CATTCGGCCCTATTGCTACT
Got2	TGGAGGTCCCATTTCACAT
Got2	TTTCTGCCCAAACCATCCTG
Got2	CATCCTCCTCACCTTCACCA
Got2	AGCTCACCTCCGGACTG
Slc1a5	AATCCCTATCGATTCTGTG
Slc1a5	TACAACAGAGTCGTTGATGG

Target.Gene.Symbol	sgRNA.Target.Sequence
Slc1a5	GCGGGAGATCAATTCAACCA
Slc1a5	GTGGTGTGCAGCCTGATCGG
Ctps	ATTGGCCATTAACCACAAGC
Ctps	ATACCAGTACGTCATTAACA
Ctps	GCCCACAAGAGCGATCGAGC
Ctps	TTAATACCCGTAGACGAAGA
Ctps2	GGATAGCATCAGTAATATGG
Ctps2	TTTGGTGTATTTACCAACCA
Ctps2	AAAAACCCACCTGTGGCACA
Ctps2	CTTCACAGCCATCTCAATGG
Slc1a4	GTCTGCAACCGATTACACAG
Slc1a4	TAGAGCCACTCCTAACACCA
Slc1a4	GATGCCACCCAGACGCCCGA
Slc1a4	ACCCACCAAACTCCCGACA
Slc38a2	CCACCAAAGCAGCTTCCACG
Slc38a2	CTCAAGACTGCCAACGAAGG
Slc38a2	GCAGTGACAATGGAAGAATG
Slc38a2	GAGTTGAAGATGAAATAGCG
Slc38a4	CCACGGACACAAATAAGACG
Slc38a4	GAAGAAGCTAGCCGATTACG
Slc38a4	GATCTCGCTGCCTAATGACT
Slc38a4	GATGAAGAGGTAGCTTGACA
Cad	CGCAGGGGTACCCGACCGTG

Target.Gene.Symbol	sgRNA.Target.Sequence
Cad	AGGATTAGAACCTTTCGTGG
Cad	ATGGTGAGTGCCCACCACAA
Cad	CTCAGAAACTCTGTTACGGG
Slc38a1	ATACTTTGGTGTGCACGCGT
Slc38a1	TGCATGGTGTATGAGAAGCT
Slc38a1	TCACCATCACCACCAACT
Slc38a1	AGATTGGCAGGACGGACGGG
Rimklb	ACTATCACTCTGCACCCATG
Rimklb	ATGGTGCTGACGGTCGAGCA
Rimklb	GTACGAGTCATTGTTGTGGG
Rimklb	AAGAATACAAGGGGTCATAG
Gpt2	GCGGTGGAGTACGCTGTGCG
Gpt2	ACGCTAAGAAACGAGCGCGG
Gpt2	GTTCTCTGCATTATCAACCC
Gpt2	GGGGATGGGAATCATCACGC
Aldh4a1	GTTCAACGCAAAGTTCGCCG
Aldh4a1	CGCTCGGCATTTCGAGTACGG
Aldh4a1	CAACTGGTACTGTATATCGG
Aldh4a1	ACCTTTATGACAGGGCAACG
Gls2	CGTCCGGTACTACCTCGGTG
Gls2	GGGGATCGGAATTACGCCAT
Gls2	AAAAGCAGGTCACCAAGTCG
Gls2	TGAGTCAGGCAGTGTTCATGG

Target.Gene.Symbol	sgRNA.Target.Sequence
Nags	GGATGAACTAAGGCACAACG
Nags	CAGCTACGGTGGCATCGTCG
Nags	GACAGCCAGAAGGTGCCGTG
Nags	GCTAGCGGCTGTAATGACTG
Cps1	TGAGCCTCACAATTCGTCTG
Cps1	ATGCAGACCGAATCATCACA
Cps1	TACAGTATTCCATGGAAGTG
Cps1	GTTGGTGGCATCTCGTGTCG
Psat1	TGGAAGGAGTGCTGACTACG
Psat1	TGCAAACGAGACTGTGCACG
Psat1	CAATACAGAGAATCTTGTGA
Psat1	CTTTGTAGTCAAGGACTGAT
Gclc	TGTGCCGGTCCTTGACTGCG
Gclc	CAATATGAGGAAACGCCGGA
Gclc	AGAAACATCCGGCATCGGAG
Gclc	TGTAGATGATAGAACACGGG
Gclm	TACTTACCCTGACTAAATCG
Gclm	GTGCCCCGTCCACGCACAGCG
Gclm	TTAACTCCATCTTCAATCGG
Gclm	GCATTTACAGCCTTACTGGG
Ppat	ACCTTGGAATCGGACATACG
Ppat	ATAAGACGCCCGATGCAGAG
Ppat	TGATCACTCTGGGACTCGTG

Target.Gene.Symbol	sgRNA.Target.Sequence
Ppat	AGGGGTGTATGCGAGTAACT
Gpt	GTA CTATGCGTCATCAACCC
Gpt	TTGATGACGCATAGTACTCG
Gpt	CCCTACCACGATGGCATCGC
Gpt	GTCCGGACTGCTCAGAAGAT
BRDN0000737434	AAACTCCCGTGTCAACCGAT
BRDN0000737467	AAACCTAGCGTAGATTCGGC
BRDN0000737505	AAAAAGTCCGCGATTACGTC
BRDN0000737609	AAACTCATACGTAGCGAATC
BRDN0000737637	AAAACGTAATTATACCGAGC
BRDN0000737693	AAAACGGCTCGATCGGTGAT
BRDN0000737801	AAACCCCGCGCGGAGCGTC
BRDN0000737848	AAACGAGGCTGTTCGTACAC
BRDN0000738185	AAAATTGCACCTCCCGGCC
BRDN0000738254	AAAGACGTGCATTCAGCGAG
Tsc2	TGAACCACATGGCTATGACG
Tsc2	CACAGGGTGATAATGAACAG
Tsc2	CAGCTCCAAAGACCCTTGAG
Tsc2	CTGATCCTAGCACACATGTG
Rheb	AACAAACTGAATTGTCAATG
Rheb	CCATATCCAACA ACTTGCCA
Rheb	TTCAGCTTGTAGACACAGCG
Rheb	TCATAGGATACCTATTATGT