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Supplemental Information

sgRNA-PSM: Predict sgRNAs On-Target Activity Based on Position-Specific Mismatch

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Online Supporting Information S1. This benchmark dataset $\mathbb{S}$ consists of 5310 guide sequences targeting 11 human genes (CD13, CD15, CD33, CCDC101, MED12, TADA2B, TADA1, HPRT, CUL3, NF1, NF2) and 6 mouse genes (Cd45, Cd28,Cd43,Cd5, H2-K, Thy1). There are 1059 high on-target activity sgRNAs, and 4251 low on-target activity sgRNAs. See the text of the paper for further explanation.

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(1) $\mathbb{S}_1^+$: 78 high on-target activity sgRNAs targeting CD13

>CD13_HsgRNA1
ATTGAAGAGAGACAGTACATGCCCTGGGAG
>CD13_HsgRNA2
TGACAATGAAGGCCAGCAAGTACGTGGACA
>CD13_HsgRNA3
GTGGAATGACCTGTGGCTGAACGAGGGCTT
>CD13_HsgRNA4
CAGCACCCAGGTACTCCACGTAGGAGGCGA
>CD13_HsgRNA5
GGGAACCTGGTGACCATAGAGTGGTGGAAT
>CD13_HsgRNA6
GTGAACTACGACGAAGAGAACTGGAGGAAG
>CD13_HsgRNA7
TGGAACTCAGTGACATTCCAGTTGGGGTCT
>CD13_HsgRNA8
TCGCACTGTCAGTGGTGTACTCCCAGGAGA
>CD13_HsgRNA9
TTGAAGAGAGACAGTACATGCCCTGGGAGG
>CD13_HsgRNA10
AGTCAGCACCCAGGTACTCCACGTAGGAGG
>CD13_HsgRNA11
GGGAAGCCCATCTGCAGGGTCCAGCGGTTC
>CD13_HsgRNA12
TCTCATACTGGCTGTCCTTCACCAGGGAGC
>CD13_HsgRNA13
GGTCATCACGGTGGATACCAGCACGGGGAC
>CD13_HsgRNA14
TCTTCAGCACATCAGGCAATGAGTGGGTCC
>CD13_HsgRNA15
TCAACATCACGCTTATCCACCCCAAGGACC
>CD13_HsgRNA16
CGGTCATCACGGTGGATACCAGCACGGGGA
>CD13_HsgRNA17
CCATCCAACTCCCCACCACCGTGCGGGACA
>CD13_HsgRNA18
CACACCAGGATCCACCCCAACCTGCGGTCC

>CD13_HsgRNA19
TGTGCCCATCACATCCATCAGAGATGGCAG
>CD13_HsgRNA20
TGCACCTCAAGGGCTCCCTGGTGAAGGACA
>CD13_HsgRNA21
ACCACCTTGGACCAAAGTAAAGCGTGGAAT
>CD13_HsgRNA22
TGAACGAGGGCTTCGCCTCCTACGTGGAGT
>CD13_HsgRNA23
GGGCCGGCGTGTTGATCTCCGAGGCGGGTG
>CD13_HsgRNA24
TGGCCGGCTCATCGAAGCATGGGAAGGACT
>CD13_HsgRNA25
AGGACGTATTCAAGCAGGGCCTGGCGGTGA
>CD13_HsgRNA26
GCACCGTCCGTTTCACCTGCAAGGAGGCCA
>CD13_HsgRNA27
ACCGCGTGATGGCAGTGGATGCACTGGCCT
>CD13_HsgRNA28
CCGTCTACTGCAACGCTATCGCCCAGGGCG
>CD13_HsgRNA29
TCTCCTCACACTCTGGAACTCCGTTGGAGC
>CD13_HsgRNA30
TGGTGAAGGACAGCCAGTATGAGATGGACA
>CD13_HsgRNA31
TGATGACCGGGAAGCCCATCTGCAGGGTCC
>CD13_HsgRNA32
AAGAGAGACAGTACATGCCCTGGGAGGCCG
>CD13_HsgRNA33
ATGAGATGGACAGCGAGTTCGAGGGGGAGT
>CD13_HsgRNA34
TACTGCAACGCTATCGCCCAGGGCGGGGAG
>CD13_HsgRNA35
CAACGCCGGCGCCATGGAGAACTGGGGACT
>CD13_HsgRNA36
TCCAGCGGTTCATGATGTCCCGCACGGTGG
>CD13_HsgRNA37
TCAAGCTCATGTTTGACCGCTCCGAGGTCT
>CD13_HsgRNA38
GTGGGCTCCGCATAGTCAGCACCCAGGTAC
>CD13_HsgRNA39
GGATGCTCTCCAGCTTCCTGTCCGAGGACG
>CD13_HsgRNA40
CCCTGCTTGAATACGTCCTCGGACAGGAAG

>CD13_HsgRNA41
TGGTGGAGCCCACCGAGTACCTGGTGGTGC
>CD13_HsgRNA42
TCTGGGCCGGCGTGTTGATCTCCGAGGCGG
>CD13_HsgRNA43
GATTGGCCTGCCAGACTTCAACGCCGGCGC
>CD13_HsgRNA44
CCGAGGCGGGTGTGGACAGCGGGTGGGAGG
>CD13_HsgRNA45
AGATGGGCTTCCCGGTCATCACGGTGGATA
>CD13_HsgRNA46
ACCCGGTAATAGCCCGTCACATTGAGGTTC
>CD13_HsgRNA47
GTGAGGTACGGTCTCAGCGTCACCCGGTAG
>CD13_HsgRNA48
GAGGGGTGGCAGACACTCACCGAGTGGTCT
>CD13_HsgRNA49
GCAAGTACGTGGACATCTTGGGCGTGGTGT
>CD13_HsgRNA50
TGCAGTAGACGGTGGACCGCAGGTTGGGGT
>CD13_HsgRNA51
TGAAGTAGCTCAGGCTGCTCAGGGCGGCCT
>CD13_HsgRNA52
CGTAGTCGAACTCACTGACAATGAAGGCCA
>CD13_HsgRNA53
GCCAGTGCATCCACTGCCATCACGCGGTAC
>CD13_HsgRNA54
CTACGTGGAGAAGCAGGCATCCAATGGTGT
>CD13_HsgRNA55
AGCGGTTCATGATGTCCCGCACGGTGGTGG
>CD13_HsgRNA56
CTCCGTTGGAGCAGGCGGTGCTGATGGCAT
>CD13_HsgRNA57
ACCATAGAGTGGTGGAATGACCTGTGGCTG
>CD13_HsgRNA58
AAGCTCAACTACACCCTCAGCCAGGGGCAC
>CD13_HsgRNA59
GTCATCACGGTGGATACCAGCACGGGGACC
>CD13_HsgRNA60
CTCTTCAGCACATCAGGCAATGAGTGGGTC
>CD13_HsgRNA61
AGACTCAGCTGCAGAGAGACCACTCGGTGA
>CD13_HsgRNA62
CAGCTCAGTCTTGTCAATGTCGGGGGGCTG

>CD13_HsgRNA63
TCCATCCAACTCCCCACCACCGTGCGGGAC
>CD13_HsgRNA64
GATCTCCGAGGCGGGTGTGGACAGCGGGTG
>CD13_HsgRNA65
AGCATCCTGAGGACTGAGGCGCCCTGGGGT
>CD13_HsgRNA66
ACTGTCTCTCTTCAATCAGGAAGAGGGTGT
>CD13_HsgRNA67
CAGTTCTCTTCGTCGTAGTTCACCCGGTAA
>CD13_HsgRNA68
ATGATCTGTGCCCGATTGATGACAGGGATG
>CD13_HsgRNA69
GTGATGACCGGGAAGCCCATCTGCAGGGTC
>CD13_HsgRNA70
GAGGTGCACCACCAGGTACTCGGTGGGCTC
>CD13_HsgRNA71
ACCATGCACCTCCGTACCTTCATGGGGCCA
>CD13_HsgRNA72
ACTCTGGAACTCCGTTGGAGCAGGCGGTGC
>CD13_HsgRNA73
TTCATGGCCGGCTCATCGAAGCATGGGAAG
>CD13_HsgRNA74
CAGCTGGCTTACCAAGTTCCAGGTGGGCTC
>CD13_HsgRNA75
TTCATGGGGCCATAGACCTCGGAGCGGTCA
>CD13_HsgRNA76
GTGCTGGTATCCACCGTGATGACCGGGAAG
>CD13_HsgRNA77
ATGATGTGTACCGCGTGATGGCAGTGGATG
>CD13_HsgRNA78
GTGTTGTTCAGCGCCAGAGTGACAGGGACC

(2) $\mathbb{S}_2^+$: 55 high on-target activity sgRNAs targeting CD15

>CD15_HsgRNA1
TGTGACCGTGGACGTGTTCGGCCGGGGCGG
>CD15_HsgRNA2
TAGGACGCGCGGTCGGTGAGCAGGCGGCAG
>CD15_HsgRNA3
GTCCACGTGGATGAAGGCGCCGCGGGGCAC
>CD15_HsgRNA4
ACCAACTGAGCCAACATGTGACCGTGGACG
>CD15_HsgRNA5
CGCCACTGTCCAGGAAACAGGGGCTGGTGG

>CD15_HsgRNA6
CACCAGCCCCTGTTTCCTGGACAGTGGCGG
>CD15_HsgRNA7
CGGTAGGAGAGCGTCCAGTTGAAGAGGTTA
>CD15_HsgRNA8
TTCGAGTCGCCCTCGCACTCCCCGGGGCTG
>CD15_HsgRNA9
CATCCAAACCCAGCGCTGGCCCGGGGGCCT
>CD15_HsgRNA10
GGCACAAAGACGTCCGAGTCCGCCCGGTAG
>CD15_HsgRNA11
TCTTCAACTGGACGCTCTCCTACCGGGCGG
>CD15_HsgRNA12
CTCCCACCACAGCAGCACGCCCACCGGTCG
>CD15_HsgRNA13
AAAGCACGGCCTGAGCCTCTCCGTAGGACG
>CD15_HsgRNA14
GAGGCACTTGGGAAGTCGTCCACGTGGATG
>CD15_HsgRNA15
GTCGCCAACCCCGTCGCGACCGGTGGGCGT
>CD15_HsgRNA16
GGCACCAAGGCTCGTCCCAGAAGGAGGTGA
>CD15_HsgRNA17
TTTTCCACCACCGCGACCTCGTGAAGGGGC
>CD15_HsgRNA18
TCGTCCACGTGGATGAAGGCGCCGCGGGGC
>CD15_HsgRNA19
AGGCCCCCGGGCCAGCGCTGGGTTTGGATG
>CD15_HsgRNA20
CAGCCCCTGTTTCCTGGACAGTGGCGGGGC
>CD15_HsgRNA21
GGCCCCGCCACTGTCCAGGAAACAGGGGCT
>CD15_HsgRNA22
GGGGCCTGGGGCTGGAGGTCGCCAGGGCTT
>CD15_HsgRNA23
TCACCGACCGCGCGTCCTACGGAGAGGCTC
>CD15_HsgRNA24
GCCCCGAGGCCGCCCCCTGACTGCCGGCTG
>CD15_HsgRNA25
GCTTCGCAGCCCCGGGGAGTGCGAGGGCGA
>CD15_HsgRNA26
GCCCCGCCACTGTCCAGGAAACAGGGGCTG
>CD15_HsgRNA27
ACCGCGCGTCCTACGGAGAGGCTCAGGCCG

>CD15_HsgRNA28
GAGCCTCTCCGTAGGACGCGCGGTCGGTGA
>CD15_HsgRNA29
GCCACTGGGACGAGCGCCAGGCCCGGGTCC
>CD15_HsgRNA30
GCCCCTGTTTCCTGGACAGTGGCGGGGCCA
>CD15_HsgRNA31
ACGACTTCCCAAGTGCCTCCTCCCTGGCCT
>CD15_HsgRNA32
GCCTGAGCCTCTCCGTAGGACGCGCGGTCG
>CD15_HsgRNA33
CGTCGCCAACCCCGTCGCGACCGGTGGGCG
>CD15_HsgRNA34
GCCCGCCCCGGCCGAACACGTCCACGGTCA
>CD15_HsgRNA35
GGGGGCCCCTTCACGAGGTCGCGGTGGTGG
>CD15_HsgRNA36
TATCGCCGCTACTTCCACTGGCGCCGGAGC
>CD15_HsgRNA37
AGTGGCGGGGCCAGGCCTGAGGGCGGGTCG
>CD15_HsgRNA38
TGCTGCTGTGGTGGGAGCCCTTCGGGGGGC
>CD15_HsgRNA39
TGGTGGCATGGGTGGTGAGCCACTGGGACG
>CD15_HsgRNA40
ACCCGGGCCTGGCGCTCGTCCCAGTGGCTC
>CD15_HsgRNA41
TCGGGGGGCCCCTTCACGAGGTCGCGGTGG
>CD15_HsgRNA42
GACCGGTGGGCGTGCTGCTGTGGTGGGAGC
>CD15_HsgRNA43
GCGGGGTTGCGGTCGAGGAAAAGCAGGTAC
>CD15_HsgRNA44
TGCGGTCGAGGAAAAGCAGGTACGAGGCCA
>CD15_HsgRNA45
CGAGGTCGCGGTGGTGGAAAAGCACGGCCT
>CD15_HsgRNA46
GGCAGTGTGCGCCTGGATGCCCCAGGGCGG
>CD15_HsgRNA47
CTCAGTTGGTGGTAGTAGCGGACCCGGGCC
>CD15_HsgRNA48
CAACTACGAGCGCTTTGTGCCCCGCGGCGC
>CD15_HsgRNA49
CTCTTCAACTGGACGCTCTCCTACCGGGCG

>CD15_HsgRNA50
ACGGTCACATGTTGGCTCAGTTGGTGGTAG
>CD15_HsgRNA51
TAGCTCCGGCGCCAGTGGAAGTAGCGGCGA
>CD15_HsgRNA52
GGCTTCGCAGCCCCGGGGAGTGCGAGGGCG
>CD15_HsgRNA53
GAGGTGATGTGGACAGCGTAGCTCCGGCGC
>CD15_HsgRNA54
TACTTGCCAGGCTTCGCAGCCCCGGGGAGT
>CD15_HsgRNA55
AACTTGTAGCGGGCCACTGTGTGCAGGAGC

(3) $\mathbb{S}_3^+$: 28 high on-target activity sgRNAs targeting CD33

>CD33_HsgRNA1
CCTCATCCCTGGCACTCTAGAACCCGGCCA
>CD33_HsgRNA2
GGGTATGGGATGGAAGAAAGTGCAGGGCAC
>CD33_HsgRNA3
ACAGCCACTCACCTGCCCACAGCAGGGGCA
>CD33_HsgRNA4
TCCTCCTGGCGTCTACGATGCTCAGGGAGC
>CD33_HsgRNA5
TCCTCGGTGCTCATAATCACCCCACGGCCC
>CD33_HsgRNA6
CCCGGAACCAGTAACCATGAACTGGGGAGT
>CD33_HsgRNA7
AGCTGACAACCAGGAGAAGATCGGGGGTGT
>CD33_HsgRNA8
GCAGGAGTCAGTGACGGTACAGGAGGGTTT
>CD33_HsgRNA9
GGCTGCAAGTGCAGGAGTCAGTGACGGTAC
>CD33_HsgRNA10
AAGTGCAGGAGTCAGTGACGGTACAGGAGG
>CD33_HsgRNA11
CTGAGCATCGTAGACGCCAGGAGGAGGGAT
>CD33_HsgRNA12
TGGTGCCGTGGTCCTGGGGCCGTGGGGTGA
>CD33_HsgRNA13
TCCCGGAACCAGTAACCATGAACTGGGGAG
>CD33_HsgRNA14
GGATGGAAGAAAGTGCAGGGCACGAGGACG
>CD33_HsgRNA15
TGCAGGAGTCAGTGACGGTACAGGAGGGTT

>CD33_HsgRNA16
GAGTGGCCGGGTTCTAGAGTGCCAGGGATG
>CD33_HsgRNA17
ACCTGTCACATGCACAGAGAGCTGGGGAGA
>CD33_HsgRNA18
GGGAGTTCTTGTCGTAGTAGGGTATGGGAT
>CD33_HsgRNA19
CCATTATATCCAGGGACTCTCCAGTGGCCA
>CD33_HsgRNA20
AGGGTATGGGATGGAAGAAAGTGCAGGGCA
>CD33_HsgRNA21
CTCCTCCTGGCGTCTACGATGCTCAGGGAG
>CD33_HsgRNA22
CAGCTGACAACCAGGAGAAGATCGGGGGTG
>CD33_HsgRNA23
TCCCTGAGCATCGTAGACGCCAGGAGGAGG
>CD33_HsgRNA24
GCCGTGGGGTGATTATGAGCACCGAGGAGT
>CD33_HsgRNA25
CACCTGTCACATGCACAGAGAGCTGGGGAG
>CD33_HsgRNA26
TTCTTGTCGTAGTAGGGTATGGGATGGAAG
>CD33_HsgRNA27
TGTTTGTGGCCACTGGAGAGTCCCTGGATA
>CD33_HsgRNA28
CAGTTGTTCCTACTGGGATCCCCAAGGAGG

(4) $\mathbb{S}_4^+$: 30 high on-target activity sgRNAs targeting CCDC101

>CCDC101_HsgRNA1
ACACAACCGCCAAGGCCGATGCAGAGGCTG
>CCDC101_HsgRNA2
CTCTACAATGACTCGGAGCCACCCCGGAAG
>CCDC101_HsgRNA3
ACTCAGCCTCTGCATCGGCCTTGGCGGTTG
>CCDC101_HsgRNA4
AAACAGGACCGAGTAGTCATCCTGGGGCTG
>CCDC101_HsgRNA5
CTGGAGGCTGCTTTACCCGCTGTGGGGGCG
>CCDC101_HsgRNA6
ATCAAGTCTCTGTTGGAAGAGAGGCGGATT
>CCDC101_HsgRNA7
TGGCATGGCTGTAACTGACCACCTCGGCCA
>CCDC101_HsgRNA8
CCCTCAGCATCCTTCGGAAAGCTCTGGACA

>CCDC101_HsgRNA9
CAAACAGGACCGAGTAGTCATCCTGGGGCT
>CCDC101_HsgRNA10
GTGTCATCCCGCTGCCCCAGTGGAAGGCCA
>CCDC101_HsgRNA11
GGGTCATGGCCGACTGCTGCAGCAGGGTCA
>CCDC101_HsgRNA12
TGTTCCAGAAGGAGCAGCTCGTGCTGGCCC
>CCDC101_HsgRNA13
GTCACCAGGCTTCCCGATCCACAGGGGCAG
>CCDC101_HsgRNA14
CACCCCGGAAGACCATGCGCAGAGGGGTGC
>CCDC101_HsgRNA15
GGCGCGGTAGAAGCAGGTAGTCTGGGGATA
>CCDC101_HsgRNA16
ATGGCTATTCCCCTCCCCTCAATGTGGCTC
>CCDC101_HsgRNA17
ATCTCTGAGCCACATTGAGGGGAGGGGAAT
>CCDC101_HsgRNA18
CCCGCTGTGGGGGCGCATGGATCAGGGCGC
>CCDC101_HsgRNA19
TTCGGAAAGCTCTGGACAAGATCGCGGAAA
>CCDC101_HsgRNA20
CCTGGAGGCTGCTTTACCCGCTGTGGGGGC
>CCDC101_HsgRNA21
CATGGATCAGGGCGCGGTAGAAGCAGGTAG
>CCDC101_HsgRNA22
AGAAGCAGGTAGTCTGGGGATACAGGGCCA
>CCDC101_HsgRNA23
ACGAGCAGTGGATCCTGGCCGAGGTGGTCA
>CCDC101_HsgRNA24
AGCGGGATGACACGGCGCCGGCTCAGGGTG
>CCDC101_HsgRNA25
TGGAGGCTGCTTTACCCGCTGTGGGGGCGC
>CCDC101_HsgRNA26
TCCATCAGCTGATCAAACAAACCCAGGTAA
>CCDC101_HsgRNA27
CGTCTCCGGGTTGGCCTTCCACTGGGGCAG
>CCDC101_HsgRNA28
TATCTCTGAGCCACATTGAGGGGAGGGGAA
>CCDC101_HsgRNA29
CAGGTCTGGCCACGTAGTCTCCTGAGGCAG
>CCDC101_HsgRNA30
GCGATCTTGTCCAGAGCTTTCCGAAGGATG

(5) $\mathbb{S}_5^{\dagger}$: 370 high on-target activity sgRNAs targeting MED12

>MED12_HsgRNA1
TGCTAAACTGCCCACCTCAGTCCAGGGACA
>MED12_HsgRNA2
TGCTAAACTGCCCACCTCAGTCCAGGGACA
>MED12_HsgRNA3
CGATAAATGCCAGGAAGCTACTGCAGGTAT
>MED12_HsgRNA4
CGATAAATGCCAGGAAGCTACTGCAGGTAT
>MED12_HsgRNA5
TCAAAACACTCAAGCACCCAGGTCAGGAAC
>MED12_HsgRNA6
TCAAAACACTCAAGCACCCAGGTCAGGAAC
>MED12_HsgRNA7
GAGGAACAGAAGAACTTCCAGAGGAGGAGG
>MED12_HsgRNA8
CTTCAACCCCTCAAAAAGATCCCAGGGCGA
>MED12_HsgRNA9
AAGGAAGACTGGCGCATGGTCCACTGGTCC
>MED12_HsgRNA10
AAGGAAGACTGGCGCATGGTCCACTGGTCC
>MED12_HsgRNA11
AAGCAAGGATACAGCGCTCTGCAGAGGAGC
>MED12_HsgRNA12
CGCAAAGGGACAGCAGAAACTGGTGGGTTT
>MED12_HsgRNA13
CGCAAAGGGACAGCAGAAACTGGTGGGTTT
>MED12_HsgRNA14
TGAAAAGGTGAAGGAGGATGCGGCAGGTAA
>MED12_HsgRNA15
TGAAAAGGTGAAGGAGGATGCGGCAGGTAA
>MED12_HsgRNA16
GCCAAATACACAGTGCCTGTGATGCGGGCT
>MED12_HsgRNA17
GCCAAATACACAGTGCCTGTGATGCGGGCT
>MED12_HsgRNA18
GCAAACACGGCTCCATCCACGATGCGGTTC
>MED12_HsgRNA19
GCAAACACTGCCGAGCGATGAGGATGGCAA
>MED12_HsgRNA20
GCAAACACTGCCGAGCGATGAGGATGGCAA
>MED12_HsgRNA21
GTGTACAGAAGTAGGCAAGCCGGCGGGACA

>MED12_HsgRNA22
GTGTACAGAAGTAGGCAAGCCGGCGGGACA
>MED12_HsgRNA23
CTGGACAGACATGAGTTCCTGACCTGGGTG
>MED12_HsgRNA24
CTGGACAGACATGAGTTCCTGACCTGGGTG
>MED12_HsgRNA25
GTGTACAGATCATAGAGATAAGCAAGGATA
>MED12_HsgRNA26
GTGTACAGATCATAGAGATAAGCAAGGATA
>MED12_HsgRNA27
GGATACAGCTGAGGCCAAAAACCAGGGGCC
>MED12_HsgRNA28
GGATACAGCTGAGGCCAAAAACCAGGGGCC
>MED12_HsgRNA29
AGGCACAGGTCATCTTAATGAGCCAGGCAG
>MED12_HsgRNA30
AGGCACAGGTCATCTTAATGAGCCAGGCAG
>MED12_HsgRNA31
TGTTACCCTCTGGCATGGGCAGGTTGGACG
>MED12_HsgRNA32
TGTTACCCTCTGGCATGGGCAGGTTGGACG
>MED12_HsgRNA33
TGCCACCTCTACATCATGGGGCAAGGGCCC
>MED12_HsgRNA34
TGCCACCTCTACATCATGGGGCAAGGGCCC
>MED12_HsgRNA35
ACTGACGGCCTTGAATGTAAAACAAGGTTT
>MED12_HsgRNA36
ACTGACGGCCTTGAATGTAAAACAAGGTTT
>MED12_HsgRNA37
TGGCACTCACCTGCAGGTAGTGGCTGGTTC
>MED12_HsgRNA38
CTGCACTCAGTGACTTGCAATAGCCGGTCA
>MED12_HsgRNA39
TAAGACTCTTGCCTAGCCCCGTGTAGGTGA
>MED12_HsgRNA40
TAAGACTCTTGCCTAGCCCCGTGTAGGTGA
>MED12_HsgRNA41
TCCCACTGCCCTTATCAGGTCTCCCGGAAT
>MED12_HsgRNA42
TCCCACTGCCCTTATCAGGTCTCCCGGAAT
>MED12_HsgRNA43
GTATACTTGCACTCTCATCTCCCGAGGGGA

>MED12_HsgRNA44
GTATACTTGCACTCTCATCTCCCGAGGGGA
>MED12_HsgRNA45
GTGCAGAATGGCTAGGAGTGCTTAAGGCCT
>MED12_HsgRNA46
GTGCAGAATGGCTAGGAGTGCTTAAGGCCT
>MED12_HsgRNA47
GAAGAGACATGTTGACCCTTTCATGGGTGA
>MED12_HsgRNA48
GAAGAGACATGTTGACCCTTTCATGGGTGA
>MED12_HsgRNA49
ACGGAGACTGGCCCTGCAGCTGGATGGTGT
>MED12_HsgRNA50
ACGGAGACTGGCCCTGCAGCTGGATGGTGT
>MED12_HsgRNA51
GACCAGATGGCACAGGTCTTTGAGGGGTAA
>MED12_HsgRNA52
GACCAGATGGCACAGGTCTTTGAGGGGTAA
>MED12_HsgRNA53
CACCAGCATTAAGGAGTGAAGGGATGGCAG
>MED12_HsgRNA54
CACCAGCATTAAGGAGTGAAGGGATGGCAG
>MED12_HsgRNA55
AATGAGCCAGGCAGCCCGCATCACAGGCAC
>MED12_HsgRNA56
AATGAGCCAGGCAGCCCGCATCACAGGCAC
>MED12_HsgRNA57
CAATAGCCGGTCAGCTCTGCACACAGGATT
>MED12_HsgRNA58
CAATAGCCGGTCAGCTCTGCACACAGGATT
>MED12_HsgRNA59
ATGGAGCCGTGTTTGCTGTTCTCAAGGCTG
>MED12_HsgRNA60
ATGGAGCCGTGTTTGCTGTTCTCAAGGCTG
>MED12_HsgRNA61
ACACAGCCTTGAGAACAGCAAACACGGCTC
>MED12_HsgRNA62
ACACAGCCTTGAGAACAGCAAACACGGCTC
>MED12_HsgRNA63
TGTTAGGAGTTACTCACCCATGAAAGGGTC
>MED12_HsgRNA64
TGTTAGGAGTTACTCACCCATGAAAGGGTC
>MED12_HsgRNA65
AATGAGGATGGGGAAAACCCCCAGCGGCAG

>MED12_HsgRNA66
AATGAGGATGGGGAAAACCCCCAGCGGCAG
>MED12_HsgRNA67
ACCAAGGCACTAGGACAGCACAGGAGGATG
>MED12_HsgRNA68
ACCAAGGCACTAGGACAGCACAGGAGGATG
>MED12_HsgRNA69
CTGAAGGCAGCAGCAGCAGCAAGCTGGAAG
>MED12_HsgRNA70
ACTGAGGTGGGCAGTTTAGCAATGAGGGGG
>MED12_HsgRNA71
CCAAAGTATGAAGTACCCGTCCAATGGTGA
>MED12_HsgRNA72
CCAAAGTATGAAGTACCCGTCCAATGGTGA
>MED12_HsgRNA73
GTTCAGTCTGCATACCTGTCCCGCCGGCTT
>MED12_HsgRNA74
GTTCAGTCTGCATACCTGTCCCGCCGGCTT
>MED12_HsgRNA75
TGAGAGTGCAAGTATACATGTTGTGGGAGA
>MED12_HsgRNA76
GCGCATAAAGCGCATTCTCCAGGTAGGCCA
>MED12_HsgRNA77
GCGCATAAAGCGCATTCTCCAGGTAGGCCA
>MED12_HsgRNA78
CCAAATACACAGTGCCTGTGATGCGGGCTG
>MED12_HsgRNA79
CCAAATACACAGTGCCTGTGATGCGGGCTG
>MED12_HsgRNA80
CTCCATCCACGATGCGGTTCTGGGAGGCAG
>MED12_HsgRNA81
CGCAATCCTGTGTGCAGAGCTGACCGGCTA
>MED12_HsgRNA82
CGCAATCCTGTGTGCAGAGCTGACCGGCTA
>MED12_HsgRNA83
CCCCATGATGTAGAGGTGGCAATCCGGCAG
>MED12_HsgRNA84
CCCCATGATGTAGAGGTGGCAATCCGGCAG
>MED12_HsgRNA85
CAGGATTGCGATGTCATTCACCCTAGGGAA
>MED12_HsgRNA86
CAGGATTGCGATGTCATTCACCCTAGGGAA
>MED12_HsgRNA87
TGCCATTGTTAGAGGAGCAGCACAAGGCCT

>MED12_HsgRNA88
TGCCATTGTTAGAGGAGCAGCACAAGGCCT
>MED12_HsgRNA89
CCACCAAACAGAAGATCTCGCCCTGGGATC
>MED12_HsgRNA90
ACCCCAAACAGTACGACCAACCGCTGGTTG
>MED12_HsgRNA91
ACCCCAAACAGTACGACCAACCGCTGGTTG
>MED12_HsgRNA92
TTAGCAAAGATATCTTCAGCAGTGGGGAAG
>MED12_HsgRNA93
GCTTCAACCCCTCAAAAAGATCCCAGGGCG
>MED12_HsgRNA94
GAGGCAAGTGGTATGACATGCCAAGGGCAA
>MED12_HsgRNA95
GAGGCAAGTGGTATGACATGCCAAGGGCAA
>MED12_HsgRNA96
TAGGCAAGTGGTCAAGTGGTGAGCCGGTCT
>MED12_HsgRNA97
TAGGCAAGTGGTCAAGTGGTGAGCCGGTCT
>MED12_HsgRNA98
GCAGCACAGCGAATCAGATCTTCCAGGAGC
>MED12_HsgRNA99
GCAGCACAGCGAATCAGATCTTCCAGGAGC
>MED12_HsgRNA100
TTAACACATGTCCCTGGACTGAGGTGGGCA
>MED12_HsgRNA101
AGTTCACCAGCATTAAGGAGTGAAGGGATG
>MED12_HsgRNA102
AGTTCACCAGCATTAAGGAGTGAAGGGATG
>MED12_HsgRNA103
TTGCCACCTCTACATCATGGGGCAAGGGCC
>MED12_HsgRNA104
TTGCCACCTCTACATCATGGGGCAAGGGCC
>MED12_HsgRNA105
CACCCAGAACCAGCCACTACCTGCAGGTGA
>MED12_HsgRNA106
TGGTCAGACATACCTGCTGAGTGAAGGCAC
>MED12_HsgRNA107
TGGTCAGACATACCTGCTGAGTGAAGGCAC
>MED12_HsgRNA108
TGGACAGACATGAGTTCCTGACCTGGGTGC
>MED12_HsgRNA109
TGGACAGACATGAGTTCCTGACCTGGGTGC

>MED12_HsgRNA110
GATACAGCTGAGGCCAAAAACCAGGGGCCG
>MED12_HsgRNA111
GATACAGCTGAGGCCAAAAACCAGGGGCCG
>MED12_HsgRNA112
GGGCCAGTCTCCGTGTACAGAAGTAGGCAA
>MED12_HsgRNA113
CAGTCAGTGAGTAGTGCCAAACCAAGGCAC
>MED12_HsgRNA114
CAGTCAGTGAGTAGTGCCAAACCAAGGCAC
>MED12_HsgRNA115
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(6) $\mathbb{S}_6^+$: 38 high on-target activity sgRNAs targeting TADA2B

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>TADA2B_HsgRNA2
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>TADA2B_HsgRNA3
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>TADA2B_HsgRNA4
GCTCAGCCACAGAGATGTCCAGCGGGGGCA
>TADA2B_HsgRNA5
CGGAAGCTGAAAGAGAGACAGCGGCGGAAG
>TADA2B_HsgRNA6
GGGGAGTCCGGGAAGCACCAACGTGGGCAG
>TADA2B_HsgRNA7
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>TADA2B_HsgRNA8
TGCTCAGCCACAGAGATGTCCAGCGGGGGC
>TADA2B_HsgRNA9
CTTGCATGACATGAACTGGTACAGCGGCCT
>TADA2B_HsgRNA10
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>TADA2B_HsgRNA11
CGCGCCCACGTGGACATGTACGTGCGGAAG
>TADA2B_HsgRNA12
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>TADA2B_HsgRNA13
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>TADA2B_HsgRNA14
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>TADA2B_HsgRNA15
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>TADA2B_HsgRNA19
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>TADA2B_HsgRNA20
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>TADA2B_HsgRNA22
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>TADA2B_HsgRNA23
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CACGGCTACCAGCTGGTGGACGGCGGGCGC

>TADA2B_HsgRNA25
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>TADA2B_HsgRNA32
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>TADA2B_HsgRNA33
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>TADA2B_HsgRNA35
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>TADA2B_HsgRNA36
TCGATGTCCTGGCACTCGGTGCAGCGGAAG
>TADA2B_HsgRNA37
AGTCTTCACAGTCACGTAGCGGGCTGGACT
>TADA2B_HsgRNA38
GCCCTTTGTCATCGTAGGAAGATATGGCTG

(7) $\mathbb{S}_7^+$: 22 high on-target activity sgRNAs targeting TADA1

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>TADA1_HsgRNA2
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>TADA1_HsgRNA3
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>TADA1_HsgRNA6
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>TADA1_HsgRNA7
AAGAAGAACTTAAGCGAGGCCCTGGGGGAC

>TADA1_HsgRNA8
GTTAAGAGCATAGACAGTATGTGTAGGGAT
>TADA1_HsgRNA9
TTTCAGCTGTTGTCTATGCTGTGGAGGTTG
>TADA1_HsgRNA10
AATGATAGTGACTGCTTATGAGCATGGGCT
>TADA1_HsgRNA11
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>TADA1_HsgRNA14
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>TADA1_HsgRNA16
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AGGCGGCCAAGAAGAACTTAAGCGAGGCCC
>TADA1_HsgRNA18
CAATGGCGACCTTTGTGAGCGAGCTGGAGG
>TADA1_HsgRNA19
ATGATAGTGACTGCTTATGAGCATGGGCTG
>TADA1_HsgRNA20
AGCATGGGCTGGACAATGTCACCGAGGAGG
>TADA1_HsgRNA21
CTGTTTCAGCTGTTGTCTATGCTGTGGAGG
>TADA1_HsgRNA22
TCCATTCTCACAATGATTTCCTCCTGGCCA

(8) $\mathbb{S}_8^+$: 13 high on-target activity sgRNAs targeting HPRT1

>HPRT1_HsgRNA1
TTATAGCCCCCCTTGAGCACACAGAGGGCT
>HPRT1_HsgRNA2
TTGTAGCCCTCTGTGTGCTCAAGGGGGGCT
>HPRT1_HsgRNA3
GCCGAGCTGCTCACCACGACGCCAGGGCTG
>HPRT1_HsgRNA4
AATCATTATGCTGAGGATTTGGAAAGGGTG
>HPRT1_HsgRNA5
TGGTCAGGCAGTATAATCCAAAGATGGTCA
>HPRT1_HsgRNA6
TTAACTAGAATGACCAGTCAACAGGGGACA

```
>HPRT1_HsgRNA7
TTTGGAAAGGGTGTTTATTCCTCATGGACT
>HPRT1_HsgRNA8
TGGCGACCCGCAGCCCTGGCGTCGTGGTGA
>HPRT1_HsgRNA9
TATAGCCCCCCTTGAGCACACAGAGGGCTA
>HPRT1_HsgRNA10
TGTAGCCCTCTGTGTGCTCAAGGGGGGCTA
>HPRT1_HsgRNA11
GGCAGTATAATCCAAAGATGGTCAAGGTCG
>HPRT1_HsgRNA12
CTCCGTTATGGCGACCCGCAGCCCTGGCGT
>HPRT1_HsgRNA13
TTGCTCGAGATGTGATGAAGGAGATGGGAG
```

(9) $\mathbb{S}_9^{\dagger}$: 31 high on-target activity sgRNAs targeting CUL3

```
>CUL3_HsgRNA1
TCAAAAGCATGTCTTGGTGCTGGTGGGATG
>CUL3_HsgRNA2
AAACAAGGTGAATCCGACCCAGAGAGGAAA
>CUL3_HsgRNA3
GCACAAGTAACTGGCTCTAATACACGGAAG
>CUL3_HsgRNA4
GGCCAATATCCTGTCGTGAGCACCCGGACT
>CUL3_HsgRNA5
TCAAACACAACGATGGATGAATTCAGGCAA
>CUL3_HsgRNA6
TCTTACAGTCCGGGTGCTCACGACAGGATA
>CUL3_HsgRNA7
GTTTACCACAGGCGAGGGACTGTAGGGCTC
>CUL3_HsgRNA8
GATAAGCTGAAAAAGGGAGTCAAAGGGGTA
>CUL3_HsgRNA9
CTAAATAACTTGTACATGCAACCAAGGTCT
>CUL3_HsgRNA10
GAACCAATTGTAAAGGTGGTTGAAAGGGAA
>CUL3_HsgRNA11
GAAACAGGAAGATGGATCTGAAGTTGGTGT
>CUL3_HsgRNA12
ACGCCGAGGAGAGACTCACCGGAAAGGCCC
>CUL3_HsgRNA13
AGGGCTCTAACAAGCTCTCTTTCAGGGATA
>CUL3_HsgRNA14
TTTACTTACCTGGATATAGTCAACAGGATT
```

>CUL3_HsgRNA15
TGCACTTTGGTGTGGCTGACTGAGTGGGCC
>CUL3_HsgRNA16
ATATGAGCATCTCAAACACAACGATGGATG
>CUL3_HsgRNA17
TGATGCACTGCCTTGACAAATCAACGGAAG
>CUL3_HsgRNA18
TAGAGCCCTACAGTCCCTCGCCTGTGGTAA
>CUL3_HsgRNA19
GTCCGGGTGCTCACGACAGGATATTGGCCC
>CUL3_HsgRNA20
TATGGGTGTATTAGGGATCATCTACGGCAA
>CUL3_HsgRNA21
TGATTAGAGACATACTAATGTACATGGTAA
>CUL3_HsgRNA22
AGCTTATCATCAATAAATAATGAGAGGTAT
>CUL3_HsgRNA23
ATAATGAGAGGTATTCAGGAGACCTGGAGT
>CUL3_HsgRNA24
GCTGTGTTGGTTTACCACAGGCGAGGGACT
>CUL3_HsgRNA25
TTTTTTAGGTAACTCAGCAGTTGAAGGCGC
>CUL3_HsgRNA26
AAGGTTCTACTTAGCCAAACACAGTGGTCG
>CUL3_HsgRNA27
TCTCTTGGATATTACAGATGACCATGGATG
>CUL3_HsgRNA28
CCTTTTTAACTGGTCCATAAAATGTGGCAT
>CUL3_HsgRNA29
CTGTTTTACATAGGTATCTTTAGGTGGTGT
>CUL3_HsgRNA30
TGTTTTTCCTCCACAGACTGAATGTGGATG
>CUL3_HsgRNA31
GCACTTTGGTGTGGCTGACTGAGTGGGCCA

(10) $\mathbb{S}_{10}^{+}$: 148 high on-target activity sgRNAs targeting NF1

>NF1_HsgRNA1
TTTTAAAAAACCTACCGTAAACTCGGGTCA
>NF1_HsgRNA2
TTTAAAACAGACTTTCTCTCTAAGTGGTTT
>NF1_HsgRNA3
ATGCAAAGCCATATGAAATTGTAGTGGACC
>NF1_HsgRNA4
TGCAAAATTAAAACGACTCCTGAAGGGTAA

>NF1_HsgRNA5
CACAAACCTGTGGCAGATACACACTGGTCC
>NF1_HsgRNA6
CTTCAAGCCCCTTTCGATTCTAGGTGGTGG
>NF1_HsgRNA7
TTCGAAGTTGAGGGGGGAATTCTGAGGAGG
>NF1_HsgRNA8
GTTAAATAGCATTGGATACAGAGCAGGACT
>NF1_HsgRNA9
GCTCAATATCGCATTACTTAATTTAGGCAG
>NF1_HsgRNA10
AGTAAATCCACTTACCTATAGGAAGGGTCA
>NF1_HsgRNA11
TGGCACACACTTCGAAGTTGAGGGGGGAAT
>NF1_HsgRNA12
AGTCACACATGCCAGAGATTGCTCAGGAAG
>NF1_HsgRNA13
AGTTACAGTTATAGATATAGACTGCGGAGA
>NF1_HsgRNA14
AGGTACATGAAAAAGAAGAATTCAAGGCTT
>NF1_HsgRNA15
ACGGACCAATGTTAAGGATCTGGTGGGTCT
>NF1_HsgRNA16
TCCTACTGCACCGATGCTGTTCTGAGGGAA
>NF1_HsgRNA17
ATACACTGGAAAAATGTCTTGCTGGGGTAA
>NF1_HsgRNA18
AGATACTTATAGCTTCTTGTCTCCAGGTCT
>NF1_HsgRNA19
CTGAACTTCGGAATTCTGCCTCTGGGGTTT
>NF1_HsgRNA20
ACTAAGAAAGTAACAACGTGGAAGAGGTAG
>NF1_HsgRNA21
GGTTAGAACCATCAGAGAGCCTTGAGGAAA
>NF1_HsgRNA22
TGCCAGAGATTGCTCAGGAAGCAATGGAGG
>NF1_HsgRNA23
TCAGAGAGCCTTGAGGAAAACCAGCGGAAC
>NF1_HsgRNA24
TACCAGCACATAGTGAAATGTAGAAGGTGA
>NF1_HsgRNA25
GAGCAGCACTTCAGAAAAGAGTGATGGCAC
>NF1_HsgRNA26
CAAAAGCCAAAATGGAAGATGGCCAGGTAA

>NF1_HsgRNA27
AAAAAGCCACCACCTAGAATCGAAAGGGGC
>NF1_HsgRNA28
TCTGAGGAGGAACTGATGATGGCATGGAAG
>NF1_HsgRNA29
AGAAAGTAACAACGTGGAAGAGGTAGGGAA
>NF1_HsgRNA30
CCAAAGTCAGTACTGAGCACAACAAGGAAT
>NF1_HsgRNA31
GGACAGTCTACGAAAAGCTCTTGCTGGCCA
>NF1_HsgRNA32
TTGCAGTGCCACTCCAGAGGATTCCGGATT
>NF1_HsgRNA33
GACCAGTGGACAGAACTAGCTCAAAGGTAT
>NF1_HsgRNA34
TCAAAGTTTGAGGAATTTATGACTAGGTAA
>NF1_HsgRNA35
CAAGATAAGGAGAATGATTTGTAGTGGCCA
>NF1_HsgRNA36
CCAGATCCCACAGACTGATATGGCTGGTAA
>NF1_HsgRNA37
AGCAATCTCTGGCATGTGTGACTGAGGGAC
>NF1_HsgRNA38
GGATATGAATGATAGACTGGACAATGGCTT
>NF1_HsgRNA39
ACCAATGCTCTCACCTTAAAGTGTTGGTTG
>NF1_HsgRNA40
TGATATTAATGACCAGTCCATGTGTGGAAG
>NF1_HsgRNA41
CCACATTAGGCTTAGGTTACCACAAGGATC
>NF1_HsgRNA42
CAAGATTCGGCCAAAAGATGTCCCTGGGAC
>NF1_HsgRNA43
CAGGATTGATAAATCTGAGGAACATGGCAC
>NF1_HsgRNA44
CTCCATTGCTTCCTGAGCAATCTCTGGCAT
>NF1_HsgRNA45
TAGAATTGTTACAGTATATCAATGTGGATT
>NF1_HsgRNA46
CTACCAAGCTGGGACTTCCAAAGCTGGGAA
>NF1_HsgRNA47
GTGACAATACACAGCATCAATCTTAGGCCA
>NF1_HsgRNA48
CTGCCACATCAAGGGAATTGTTGAAGGACA

>NF1_HsgRNA49
CCTACAGGAATGGATCAACATGACTGGCTT
>NF1_HsgRNA50
CGCACAGGCCGGTGGAATGGGTCCAGGCCG
>NF1_HsgRNA51
CAGTCATGTTGATCCATTCCTGTAGGGAGT
>NF1_HsgRNA52
ACACCCAAAGACAACAAGAGCTCTTGGTTG
>NF1_HsgRNA53
AAAGCCACCACCTAGAATCGAAAGGGGCTT
>NF1_HsgRNA54
TCAACCACCATGGACTGAACAAGTAGGAAA
>NF1_HsgRNA55
TCAACCACGTCTTTGGATATATCCTGGATT
>NF1_HsgRNA56
CAATCCATGGAATTGTGCAGAGTGTGGTGT
>NF1_HsgRNA57
TTTTCCTACTTGTTCAGTCCATGGTGGTTG
>NF1_HsgRNA58
TGGCCGCGCACAGGCCGGTGGAATGGGTCC
>NF1_HsgRNA59
TGAGCGGCGTGCCCTGGTTTGCAATGGTTA
>NF1_HsgRNA60
GAGTCGGGCTGTGACAGTTCCCAGCGGGTC
>NF1_HsgRNA61
GTGGCTACTAAGAAAGTAACAACGTGGAAG
>NF1_HsgRNA62
CCTGCTCGTCGAAGCGGCTGACCACGGCCT
>NF1_HsgRNA63
TCGCCTCTGCACAAAGCCCTCTTTTGGGTA
>NF1_HsgRNA64
AGTTCTGACAAAAATCCTTCAACAAGGCAC
>NF1_HsgRNA65
TGGTCTGGCCGACAGTTGGATAGGTGGCTG
>NF1_HsgRNA66
TGTCCTGTTTCCGCCACCTCTGTGAGGAAG
>NF1_HsgRNA67
CAATCTTAGGCCACCAATCCAATGCGGACT
>NF1_HsgRNA68
CACTCTTCCAAAAATTCTAACGTGAGGTGT
>NF1_HsgRNA69
ATAGCTTCTTGTCTCCAGGTCTGTAGGTTT
>NF1_HsgRNA70
TTATCTTGTGTCCAGAAATAATCCAGGATA

>NF1_HsgRNA71
AACAGAAACTACCTGCTGCCACCTTGGCTT
>NF1_HsgRNA72
TTCAGAACCTTTGGGAGAGGACCATGGCTG
>NF1_HsgRNA73
TAGGGAAGATGAGCTGCCACATCAAGGGAA
>NF1_HsgRNA74
GTAGGACAATCAGATGCTATATCAAGGAAA
>NF1_HsgRNA75
CAATGAGATTAGATGAAACGATGCTGGTCA
>NF1_HsgRNA76
TTGTGAGCTAGCTTGAGAGCATTGTGGAAT
>NF1_HsgRNA77
CACAGAGGTGGCGGAAACAGGACATGGCAA
>NF1_HsgRNA78
CATGGAGTCATGTATTCCAAACAAAGGTGT
>NF1_HsgRNA79
CAGAGATTGCTCAGGAAGCAATGGAGGTAA
>NF1_HsgRNA80
CCTTGCAGCCACCTATCCAACTGTCGGCCA
>NF1_HsgRNA81
TTAGGCAGTTCTGACCCGAGTTTACGGTAG
>NF1_HsgRNA82
GCGTGCCCTGGTTTGCAATGGTTAAGGTGA
>NF1_HsgRNA83
TTTGGCCGAATCTTGGTGTGTTGGGGGATA
>NF1_HsgRNA84
TATGGCTTTAAAGTCAGTAAGACATGGTAT
>NF1_HsgRNA85
GTGAGGAAGCAGATATCCGGTGTGGGGTGG
>NF1_HsgRNA86
GACTGGACAATGGCTTCACACTCCTGGTGC
>NF1_HsgRNA87
CATGGGACATTCGCCTCTTAACAATGGTCT
>NF1_HsgRNA88
TACAGGGCCACTTCTAGTTTGGTCTGGGCT
>NF1_HsgRNA89
AGTCGGGCTGTGACAGTTCCCAGCGGGTCC
>NF1_HsgRNA90
AAAGGGGCTTGAAGTTAATGTCAAAGGTGA
>NF1_HsgRNA91
AGATGGTAGAATACCTGACAGACTGGGTTA
>NF1_HsgRNA92
GATTGGTGGAACTGGTCACAATGATGGGTG

>NF1_HsgRNA93
TCAGGGTTCCACAGAAACATGTACAGGGCC
>NF1_HsgRNA94
GAAAGTAACAACGTGGAAGAGGTAGGGAAG
>NF1_HsgRNA95
GGCAGTACAGCAGAATTAATTACAGGGCTC
>NF1_HsgRNA96
GGCTGTGACAGTTCCCAGCGGGTCCGGATA
>NF1_HsgRNA97
ATTGGTGGAACTGGTCACAATGATGGGTGA
>NF1_HsgRNA98
AATGGTGTGTAACCATGAGAAAGTGGGACT
>NF1_HsgRNA99
CTTGGTGTGTTGGGGGATAGAGTCGGGCTG
>NF1_HsgRNA100
CAGGGTTCCACAGAAACATGTACAGGGCCA
>NF1_HsgRNA101
CCTTGTTGTGCTCAGTACTGACTTTGGTAT
>NF1_HsgRNA102
CTTTGTTTGGAATACATGACTCCATGGCTG
>NF1_HsgRNA103
AATTTAAAGAAAAACCTACAGACCTGGAGA
>NF1_HsgRNA104
TCTATAACTGTAACTCCTGGGTCAGGGAGT
>NF1_HsgRNA105
GTGCTACCTATCTACAAAAACTCCTGGATC
>NF1_HsgRNA106
ATGTTACCTTAAGATCAACCACCATGGACT
>NF1_HsgRNA107
GTCTTACTAATAGAGACAATAAAGAGGGTG
>NF1_HsgRNA108
CCCTTAGAGCTTCCACACATGGACTGGTCA
>NF1_HsgRNA109
TACGTAGTAATTCTTCATGATCCATGGACA
>NF1_HsgRNA110
ATTGTAGTGGACCTTACCCATACCGGGCCT
>NF1_HsgRNA111
TCTATATCTATAACTGTAACTCCTGGGTCA
>NF1_HsgRNA112
TGTGTCAATTAGTTGAAGTAATGATGGCAA
>NF1_HsgRNA113
TGCTTCATACGGTGAGACAATGGCAGGATT
>NF1_HsgRNA114
TCTATCATTCATATCCGGACCCGCTGGGAA

>NF1_HsgRNA115
AGACTCCATGCAGACTCTCTTCCGAGGCAA
>NF1_HsgRNA116
GAATTCCGAAGTTCAGCTGCATGCTGGTTT
>NF1_HsgRNA117
CGGGTCCGGATATGAATGATAGACTGGACA
>NF1_HsgRNA118
GAATTCGTTGATCAAACTCATCTGTGGTAT
>NF1_HsgRNA119
CTCTTCTAAAGCCAAGGTGGCAGCAGGTAG
>NF1_HsgRNA120
CCCATCTATTCAAGCAAAAATATGGGGAAG
>NF1_HsgRNA121
AAGGTGAACTGGTTCTCATCTACTAGGCAG
>NF1_HsgRNA122
TGCATGAAGGTGAGCGGCGTGCCCTGGTTT
>NF1_HsgRNA123
CTGTTGACATCATATTGCTGACAGAGGCAA
>NF1_HsgRNA124
TGGCTGATCGGTTTGAGAGATTGGTGGAAC
>NF1_HsgRNA125
AATGTGCAGAAAAGCTATTTGACTTGGTGG
>NF1_HsgRNA126
TTTTTGCATCTTGGCAGGCTACACTGGTAA
>NF1_HsgRNA127
CGATTGCTAGGCCCGGTATGGGTAAGGTCC
>NF1_HsgRNA128
ACAATGGCAGGATTGATAAATCTGAGGAAC
>NF1_HsgRNA129
GAAGTGGCCCTGTACATGTTTCTGTGGAAC
>NF1_HsgRNA130
AAGATGGTAGAATACCTGACAGACTGGGTT
>NF1_HsgRNA131
CCAATGTGGTTCCTTGTTCTCAGTGGGTAA
>NF1_HsgRNA132
GGCATGTGTGACTGAGGGACCAGTTGGACG
>NF1_HsgRNA133
GAAGTGTGTGCCACTGTTTATACCAGGTAT
>NF1_HsgRNA134
GGACTTACATTGGTGATGATTCGATGGAGT
>NF1_HsgRNA135
ATCCTTACCAGCCATATCAGTCTGTGGGAT
>NF1_HsgRNA136
TCATTTAGAAAGACTGATTGCCCTAGGACT

>NF1_HsgRNA137
TGTATTAGCAAACGAGTGTCTCATGGGCAG
>NF1_HsgRNA138
TGGATTATTTCTGGACACAAGATAAGGAGA
>NF1_HsgRNA139
TGGCTTCACACTCCTGGTGCATGAAGGTGA
>NF1_HsgRNA140
TTTGTTCGCTCTGCTGAAGTTACTTGGACA
>NF1_HsgRNA141
CACCTTCTACATTTCACTATGTGCTGGTAA
>NF1_HsgRNA142
GCAGTTCTGACCCGAGTTTACGGTAGGTTT
>NF1_HsgRNA143
GAAGTTGAGGGGGGAATTCTGAGGAGGAAC
>NF1_HsgRNA144
TGGTTTGCAATGGTTAAGGTGAACTGGTTC
>NF1_HsgRNA145
GTCATTGCCTTCCGTTCCAGTTACCGGGAC
>NF1_HsgRNA146
TCTTTTGGCCGAATCTTGGTGTGTTGGGGG
>NF1_HsgRNA147
TGGTTTGTTCTACAAATTGAGTATTGGTAT
>NF1_HsgRNA148
CTGTTTTAAAGCGATTGCTAGGCCCGGTATGGACGTGTTCGGCCGGGGCGG

(11) $\mathbb{S}_{11}^{+}$: 45 high on-target activity sgRNAs targeting NF2

>NF2_HsgRNA1
ATGAAAAGATCTACTGCCCTCCTGAGGCTT
>NF2_HsgRNA2
AAGCAACAATGGCCAACGAAGCACTGGTGA
>NF2_HsgRNA3
AAGCAACCCAAGACGTTCACCGTGAGGATC
>NF2_HsgRNA4
TAAAAAGGGCACAGAGCTGCTGCTTGGAGT
>NF2_HsgRNA5
GACTACGACCCCAGTGTTCACAAGCGGGGA
>NF2_HsgRNA6
AGGTACTGGATCATGATGTTTCAAAGGAAG
>NF2_HsgRNA7
CCACAGATTCTCCAGCTATGTATCGGGAAC
>NF2_HsgRNA8
GTTCAGCAGATGAAAGCCCAGGCCAGGGAG
>NF2_HsgRNA9
TTCTAGCCTTCTCCTCCCTGGCCTGGGCTT

>NF2_HsgRNA10
AAAAATCCCCGCTTGTGAACACTGGGGTCG
>NF2_HsgRNA11
GACGATCCTCACGGTGAACGTCTTGGGTTG
>NF2_HsgRNA12
CGAGATGTTTCGGATTTCATTCCACGGGAA
>NF2_HsgRNA13
TTTGATTTGGTGTGCCGGACTCTGGGGCTC
>NF2_HsgRNA14
AGGCCACAGCGATTCGCACGGAGGAGGAGA
>NF2_HsgRNA15
GGCTCACCGGGTACGTGGGCTTGGTGGCAA
>NF2_HsgRNA16
CGTTCACCGTGAGGATCGTCACCATGGACG
>NF2_HsgRNA17
GAAACATCTCGTACAGTGACAAGGAGGTAG
>NF2_HsgRNA18
CATTCCACGGGAAGGAGATCTTGGGGGTCA
>NF2_HsgRNA19
AGGACCTGCAGGAAGCACGCGAGGCGGAGC
>NF2_HsgRNA20
ACGCCGAGATGGAGTTCAATTGCGAGGTAA
>NF2_HsgRNA21
TGGCCTGGCTCAAAATGGACAAGAAGGTTG
>NF2_HsgRNA22
AGGAGAAGCGCCTGATGGAGCAGAAGGTGC
>NF2_HsgRNA23
TGACGATCCTCACGGTGAACGTCTTGGGTT
>NF2_HsgRNA24
CTTTGATTTGGTGTGCCGGACTCTGGGGCT
>NF2_HsgRNA25
AGAAGCCAGGAGCACAGAAGCCTCAGGAGG
>NF2_HsgRNA26
ATCGGGAACCATGATCTATTTATGAGGAGA
>NF2_HsgRNA27
AAATGGAATATCTGAAGATAGCTCAGGACC
>NF2_HsgRNA28
GCCAGGAGCACAGAAGCCTCAGGAGGGCAG
>NF2_HsgRNA29
TGAGGGAGGAGGCTGAACGCACGAGGGATG
>NF2_HsgRNA30
TCAGGGTCATAAATGTGAAGCCCCAGGGCA
>NF2_HsgRNA31
TGCAGTACACAATCAAGGACACAGTGGCCT

>NF2_HsgRNA32
CGGCGTCCATGGTGACGATCCTCACGGTGA
>NF2_HsgRNA33
TTCTTACGCCGTCCAGGCCAAGGTAGGCTC
>NF2_HsgRNA34
GCTGTCACCAATGAGGTTGAAGCTTGGTAT
>NF2_HsgRNA35
TGTATCAGATGACTCCGGAAATGTGGGAGG
>NF2_HsgRNA36
TCATTCCACGGGAAGGAGATCTTGGGGGTC
>NF2_HsgRNA37
AGAGTCCGGCACACCAAATCAAAGAGGTCC
>NF2_HsgRNA38
TTCTTCTTTGAGCCTACCTTGGCCTGGACG
>NF2_HsgRNA39
TCTTTGAGCCTACCTTGGCCTGGACGGCGT
>NF2_HsgRNA40
GTTTTGCCTCCTCCTCGGTGATCTGGGCCT
>NF2_HsgRNA41
TCTTTGGACTGCAGTACACAATCAAGGACA
>NF2_HsgRNA42
ATCTTGGGGGTCAGTCTGTTCTCAGGGTCA
>NF2_HsgRNA43
GAGATGTTTCGGATTTCATTCCACGGGAAG
>NF2_HsgRNA44
AATTTTATCCTGAGAATGCTGAAGAGGAGC
>NF2_HsgRNA45
CAGGTTTCTCGGAGCCCCAGAGTCCGGCAC

(12) $\mathbb{S}_{12}^{+}$: 48 high on-target activity sgRNAs targeting CD5

>CD5_HsgRNA1
CTTCACCAGCTTCTTGTAGACCAGAGGACC
>CD5_HsgRNA2
CCACACTGCAGAGACTTACAGATGAGGTTC
>CD5_HsgRNA3
AGAGACTTACAGATGAGGTTCCCCAGGCCC
>CD5_HsgRNA4
GTGGAGATCCAGATGGAAAACAAGTGGAAA
>CD5_HsgRNA5
ATCCAGGCCAAGACCCAAACCCAGCGGGCC
>CD5_HsgRNA6
CTGTAGTGAGACACAGCTCCCGTTCGGGGC
>CD5_HsgRNA7
TTGGATATAGACCACGGAGATCCTTGGCAG

>CD5_HsgRNA8
ACAGATGAGGTTCCCCAGGCCCAGGGGCCT
>CD5_HsgRNA9
GCCAATTCGATGGGAGGCCCCGAACGGGAG
>CD5_HsgRNA10
TGTTCAATGAAGGGAAAGGACCAAGGGCCA
>CD5_HsgRNA11
AGGCCACCCCTTCCAGACTGTCCGAGGCAG
>CD5_HsgRNA12
CACACACTGCTGCCCCCGACCAGGCGGCTC
>CD5_HsgRNA13
CCAGCAGCACCACCAGGAGTACAAGGGTCA
>CD5_HsgRNA14
CACCCAGCGTTCCCAGCAGGTATGTGGCAG
>CD5_HsgRNA15
ATTGCAGCTGGTGCCAGGACACGAAGGCCT
>CD5_HsgRNA16
AAAACAGTGTGCAGTTCCAGTTGGAGGCTG
>CD5_HsgRNA17
CCTTCCGCTGAGCCTGATCTGCCTAGGTGG
>CD5_HsgRNA18
CCCACCTAGGCAGATCAGGCTCAGCGGAAG
>CD5_HsgRNA19
TCATCCTGACCCTTGTACTCCTGGTGGTGC
>CD5_HsgRNA20
GTGGCGACCTCATCTCCTTCCACACGGTGG
>CD5_HsgRNA21
TCCGCTGAGCCTGATCTGCCTAGGTGGGTG
>CD5_HsgRNA22
GCTGCTGGCTGCCACATACCTGCTGGGAAC
>CD5_HsgRNA23
TCTCCTGGGCACAGAGGAACCCGGGGGAGG
>CD5_HsgRNA24
CACGGAGATCCTTGGCAGAAGACCTGGTTC
>CD5_HsgRNA25
CTCAGATATCCAGGTGATGCTAAGTGGCTC
>CD5_HsgRNA26
GTTTGCACACTGCAGAGGCCTGCTGGGCAT
>CD5_HsgRNA27
TACAGCAGTGCTTCCAGAAAACAACGGCCC
>CD5_HsgRNA28
TCCAGCCCAAGGTTCAGAGCCGCCTGGTCG
>CD5_HsgRNA29
AACAGCTGAGATGTGGTGACCCCTTGGCCC

>CD5_HsgRNA30
TGCTGCTGGCTGCCACATACCTGCTGGGAA
>CD5_HsgRNA31
GAAGGGAAAGGACCAAGGGCCAAGGGGTCA
>CD5_HsgRNA32
TCCTGGCACCAGCTGCAATCTGGGAGGAGC
>CD5_HsgRNA33
CCTAGGCAGATCAGGCTCAGCGGAAGGCAC
>CD5_HsgRNA34
AAGTGGCTCCAATTCCAAGTGTCAGGGTCA
>CD5_HsgRNA35
TGAAGGGAAAGGACCAAGGGCCAAGGGGTC
>CD5_HsgRNA36
CAGCGGGCCTGGCCCCAGGCACTGTGGCAA
>CD5_HsgRNA37
GTCAGGGTCAAGTGGAGATCCAGATGGAAA
>CD5_HsgRNA38
CTGGGGTCTGTTCAATGAAGGGAAAGGACC
>CD5_HsgRNA39
CACAGGTGTGGTGGAATTCTACAATGGCAG
>CD5_HsgRNA40
TCTTGTAGACCAGAGGACCACACATGGCCA
>CD5_HsgRNA41
GCCTGTCCTTGGCCTTGTAGAGGATGGTGC
>CD5_HsgRNA42
TGCAGTGTGCAAACAGCTGAGATGTGGTGA
>CD5_HsgRNA43
CAGATCAGGCTCAGCGGAAGGCACTGGTCT
>CD5_HsgRNA44
TGGTTCTGGGGTCTGTTCAATGAAGGGAAA
>CD5_HsgRNA45
CAGGTCTTCTGCCAAGGATCTCCGTGGTCT
>CD5_HsgRNA46
CCGCTGAGCCTGATCTGCCTAGGTGGGTGA
>CD5_HsgRNA47
TATGTGGCAGCCAGCAGCACTTCGTGGGAG
>CD5_HsgRNA48
GTTGTTGCAGTTGGATATAGACCACGGAGA

(13) $\mathbb{S}_{13}^{+}$: 15 high on-target activity sgRNAs targeting CD28

>CD28_HsgRNA1
GACTACATGAACATGACTCCCCGGAGGCCT
>CD28_HsgRNA2
CACGACCAGTGCCCAAAACAGCTTAGGAGA

>CD28_HsgRNA3
CTCTCGTTGTCTAGGTAAGGCGGAGGGTAC
>CD28_HsgRNA4
TTACCTAGACAACGAGAGGAGCAATGGAAC
>CD28_HsgRNA5
GCTCCTCTCGTTGTCTAGGTAAGGCGGAGG
>CD28_HsgRNA6
CAATGACACTCAGGCTGCTGTTCTTGGCTC
>CD28_HsgRNA7
CCCTGCTTGTGGTAGATAGCAACGAGGTCA
>CD28_HsgRNA8
CCTCGTTGCTATCTACCACAAGCAGGGGCG
>CD28_HsgRNA9
GCCCTCATCAGAACAATGACACTCAGGCTG
>CD28_HsgRNA10
GAACTCGGCATTCGAGCGAAACTGGGGCTG
>CD28_HsgRNA11
TGATTGACGTGCAGATTCCAGAGACGGAAC
>CD28_HsgRNA12
AGGTTGTAGGAATACCTGCAGCTGAGGCTG
>CD28_HsgRNA13
GGAATTCCGGGCATCCCTGTACAAGGGCGT
>CD28_HsgRNA14
CAACTTCTTCTCAGTTCAAGTAACAGGTAA
>CD28_HsgRNA15
CTCGTTGCTATCTACCACAAGCAGGGGCGA

(14) $\mathbb{S}_{14}^{+}$: 34 high on-target activity sgRNAs targeting H2-K

>H2-K_HsgRNA1
GCGGAGAATCCGAGATATGAGCCGCGGGCG
>H2-K_HsgRNA2
AAGCAGAGAGACTCAGGGCCTACCTGGAGG
>H2-K_HsgRNA3
CACCAGCCTGCTCCCACTTGTGTTTGGTGA
>H2-K_HsgRNA4
TCGTAGGCGTACTGCTGGTACCCGCGGAGG
>H2-K_HsgRNA5
CAGGAGGGGCCCGAGTATTGGGAGCGGGAG
>H2-K_HsgRNA6
AGGGCAATGAGCAGAGTTTCCGAGTGGACC
>H2-K_HsgRNA7
CCACCACAGATGCCCACTTCTGGAAGGTTC
>H2-K_HsgRNA8
TGATCACCAAACACAAGTGGGAGCAGGCTG

>H2-K_HsgRNA9
ACTTCCATGTACCGGGGCTCCCCGAGGCCG
>H2-K_HsgRNA10
GTGACGAAATACCTCAGCGAGTGTGGGCCT
>H2-K_HsgRNA11
TGAACGAAGACCTGAAAACGTGGACGGCGG
>H2-K_HsgRNA12
GCGGCGCTGATCACCAAACACAAGTGGGAG
>H2-K_HsgRNA13
CTCCCGGCCCGGTACTCACCCGCGCGGGTC
>H2-K_HsgRNA14
TAGGCGTACTGCTGGTACCCGCGGAGGAGT
>H2-K_HsgRNA15
TCCACGTAGCCGACTTCCATGTACCGGGGC
>H2-K_HsgRNA16
AGACCTGAAGATAAAGTCACCCTGAGGTGC
>H2-K_HsgRNA17
TGCTCTGGTTGTAGTAGCCGAGCAGGGTCC
>H2-K_HsgRNA18
AAATCTTCCACACAGATTCCCCAAAGGCCC
>H2-K_HsgRNA19
CTCGGAAACTCTGCTCATTGCCCTTGGCTT
>H2-K_HsgRNA20
CAGAGAGACTCAGGGCCTACCTGGAGGGCA
>H2-K_HsgRNA21
CCGAGATATGAGCCGCGGGCGCGGTGGATG
>H2-K_HsgRNA22
CCGAGCAGGGTCCTCAGGTCCACTCGGAAA
>H2-K_HsgRNA23
GCGGGCGCGGTGGATGGAGCAGGAGGGGCC
>H2-K_HsgRNA24
CGGCGCTGATCACCAAACACAAGTGGGAGC
>H2-K_HsgRNA25
TCTGGCTGTGAAGTGGGGTCCGACGGGCGA
>H2-K_HsgRNA26
CCCTGGCTCCGACTCAGACCCGCGCGGGTG
>H2-K_HsgRNA27
CGCGGGTCTGAGTCGGAGCCAGGGCGGCCG
>H2-K_HsgRNA28
CCCGGTACATGGAAGTCGGCTACGTGGACG
>H2-K_HsgRNA29
CCACGTAGCCGACTTCCATGTACCGGGGCT
>H2-K_HsgRNA30
CGGGTACCAGCAGTACGCCTACGACGGCTG

>H2-K_HsgRNA31
CACGTAGCCGACTTCCATGTACCGGGGCTC
>H2-K_HsgRNA32
CAGGTCTGCTGTGATGGGTCACATGGGCCT
>H2-K_HsgRNA33
AGGCTGGTGAAGCAGAGAGACTCAGGGCCT
>H2-K_HsgRNA34
TCTGTGTCTCCCGCTCCCAATACTCGGGCC

(15) $\mathbb{S}_{15}^{+}$: 56 high on-target activity sgRNAs targeting CD45

>CD45_HsgRNA1
TGACAAAGACTTCTGTGTCCAGAAGGGCAA
>CD45_HsgRNA2
CCAGAAATGATGATTGCTGCTCAGGGGCCA
>CD45_HsgRNA3
CAGAAACGCCTAAGCCTAGTTGTGGGGATC
>CD45_HsgRNA4
AGCTAAGGCGACAGAGGTGTCTGATGGTGC
>CD45_HsgRNA5
CCAGAAGTTTGAGCCACAAACCCATGGTCA
>CD45_HsgRNA6
AGACAATAGTATAAATGTTACATGTGGTCC
>CD45_HsgRNA7
CATTAATGCATCCTTTGTGATGGTAGGTAC
>CD45_HsgRNA8
CATCAATGTAGCTGGCATTTATGTAGGTGG
>CD45_HsgRNA9
TTGGAATGTCTCAGCTCAAAAGTTCGGAGA
>CD45_HsgRNA10
ACTTACATAGCTGCACACCACCCCAGGCCG
>CD45_HsgRNA11
TGTAACATTTATACTATTGTCTGTCGGCCG
>CD45_HsgRNA12
TCACACGATGTGAAGAAGGAAACAGGGTAA
>CD45_HsgRNA13
CTGCACTTTCCAAGAGATTGAACAAGGCAC
>CD45_HsgRNA14
GCGCAGAATACTGGCCAAGCATGGAGGAAG
>CD45_HsgRNA15
GATGAGACAGTTGATGACTTCTGGAGGATG
>CD45_HsgRNA16
CCTTAGTGCTGGTGTTGGGCGTACAGGTAC
>CD45_HsgRNA17
AACTATAGATTTATATGTACCACCAGGTGA

>CD45_HsgRNA18
TCTTATAGCATAAAACATATCCATGGGGTT
>CD45_HsgRNA19
TTTGATAGGTCCGGACAAGGTCAATGGAAT
>CD45_HsgRNA20
TTTAATCAGATGATTATAACCGTGTGGAAC
>CD45_HsgRNA21
TTTGATCAGGGCTTCAAGGAACCCAGGAAA
>CD45_HsgRNA22
CAGGCAGCTCTTCCCCTTTCCATGTGGTAC
>CD45_HsgRNA23
CCAGCATGGCATCAATTCCAATGTAGGTAC
>CD45_HsgRNA24
AATACATTAATGCATCCTTTGTGATGGTAG
>CD45_HsgRNA25
AGTACCAGTGTACCACATGGAAAGGGGAAG
>CD45_HsgRNA26
AAGGCCTGGAAGCAGAGGGCAAAGTGGATG
>CD45_HsgRNA27
GCTACCTGGTATTCAGCCTCCAGAGGGGAG
>CD45_HsgRNA28
CTCTCTGAAATAAATGGAGATGCAGGGTCC
>CD45_HsgRNA29
GACAGAGATGGATCCCAGCAGACAGGGTTG
>CD45_HsgRNA30
AGGTGAGGGTCTTCAGGAACCCCATGGTCT
>CD45_HsgRNA31
GACAGAGGTGTCTGATGGTGCAAGTGGAGG
>CD45_HsgRNA32
ACCTGAGTCTGCATCTAAACCCCATGGATA
>CD45_HsgRNA33
TCTTGCAGCTGGATCCCCACAACTAGGCTT
>CD45_HsgRNA34
CCCAGCATCGTACCTGGCTCACAGTGGAGT
>CD45_HsgRNA35
GATGGGAAACTTGCTGAATACCCGTGGAAT
>CD45_HsgRNA36
AGCTGGATCCCCACAACTAGGCTTAGGCGT
>CD45_HsgRNA37
TCAGGGGCCACTAAAAGAAACGATCGGTGA
>CD45_HsgRNA38
TTTAGGGCCATTAGTTTCATAAGGAGGACC
>CD45_HsgRNA39
ACTTGTACTTAACTCCTAGGGCCCCGGGAT

>CD45_HsgRNA40
ATGTGTAGCAGAAATCTTATATCGCGGTGT
>CD45_HsgRNA41
ATTTGTATCTTTCAGAGCATTCCACGGGTA
>CD45_HsgRNA42
AGAGGTGTCTGATGGTGCAAGTGGAGGTAC
>CD45_HsgRNA43
GTTATAAATGTGCAGACAGATTTGGGGAGT
>CD45_HsgRNA44
TTCCTAACCTGCAGTGGACGAGGATGGATG
>CD45_HsgRNA45
CTTGTACTTAACTCCTAGGGCCCCGGGATG
>CD45_HsgRNA46
CTTATAGCATAAAACATATCCATGGGGTTT
>CD45_HsgRNA47
TTCTTATAGCATAAAACATATCCATGGGGT
>CD45_HsgRNA48
TTTGTATCTTTCAGAGCATTCCACGGGTAT
>CD45_HsgRNA49
GAAGTCATCAACTGTCTCATCCCGGGGCCC
>CD45_HsgRNA50
CCTTTCCATGTGGTACACTGGTACTGGTAC
>CD45_HsgRNA51
GCTTTGCGTAGAGACTTTACCACTTGGAAA
>CD45_HsgRNA52
ATCGTGTGACCATGACAATAACTGTGGCCT
>CD45_HsgRNA53
GTCTTTACCTGCAGTGCACCACAATGGGAC
>CD45_HsgRNA54
CCATTTATTTCAGAGAGTTCCACACGGTTA
>CD45_HsgRNA55
CCAATTCACCAGCTGGCCAGACCATGGGGT
>CD45_HsgRNA56
TATGTTGTCAAGCTAAGGCGACAGAGGTGT

(16) $\mathbb{S}_{16}^{+}$: 13 high on-target activity sgRNAs targeting THY1

>THY1_HsgRNA1
AGCCAACTTCACCACCAAGGATGAGGGCGA
>THY1_HsgRNA2
GTGCCAGTCTTGCAGGTGTCCCGAGGGCAG
>THY1_HsgRNA3
TTCTCATGGCGGCAGTCCAGGCGAAGGTTT
>THY1_HsgRNA4
TGTGCCAGTCTTGCAGGTGTCCCGAGGGCA

>THY1_HsgRNA5
TTACCCTAGCCAACTTCACCACCAAGGATG
>THY1_HsgRNA6
TTATCCTTGGTGTTATTCTCATGGCGGCAG
>THY1_HsgRNA7
GGTACGTGTGCTCGGGTATCCCAAGGGTGC
>THY1_HsgRNA8
AGGGCTGGTTGGAGAGGGTGACGCGGGAGC
>THY1_HsgRNA9
CATCCTTGGTGGTGAAGTTGGCTAGGGTAA
>THY1_HsgRNA10
CACAGACAAGCTGGTCAAGTGTGGCGGCAT
>THY1_HsgRNA11
CCTTGATATAGGGCTGGTTGGAGAGGGTGA
>THY1_HsgRNA12
TCTCGGGTCAGGCTGAACTCATGCTGGATG
>THY1_HsgRNA13
TTGGTGGTGAAGTTGGCTAGGGTAAGGACC

(17) $\mathbb{S}_{17}^{+}$: 35 high on-target activity sgRNAs targeting CD43

>CD43_HsgRNA1
ACAGAACTGGTTGCTGTGGTAGCAGGGAGT
>CD43_HsgRNA2
CGCCACAACAGCAGTAGCGCCACGAGGGCC
>CD43_HsgRNA3
GAAGACAATTCAGTAGTTTCCAAGGGGGTC
>CD43_HsgRNA4
AAGAAGACAATTCAGTAGTTTCCAAGGGGG
>CD43_HsgRNA5
CTGCAGTTCCGTCTGTCACAGGATTGGCTG
>CD43_HsgRNA6
AAGACAATTCAGTAGTTTCCAAGGGGGTCA
>CD43_HsgRNA7
GTCACCACAGCTACTGGGTCTCTGGGGCCC
>CD43_HsgRNA8
AATGCCAGCCCATCAGTTTCTGTGGGGTCA
>CD43_HsgRNA9
TCTACCCAAGATCCCATAACCACCAGGTCA
>CD43_HsgRNA10
TGGACCCAGCATGCCCCAAAGAGGAGGAGA
>CD43_HsgRNA11
GTCCCTGACCCCACAGAAACTGATGGGCTG
>CD43_HsgRNA12
GGAGCTTACTGTTGTAGCCACAGAGGGTCC

>CD43_HsgRNA13
ATGTCTTGCTGGAAACTTCCTGAGAGGCAG
>CD43_HsgRNA14
GCTGGAAACTTCCTGAGAGGCAGTAGGCTC
>CD43_HsgRNA15
AGAAGACAATTCAGTAGTTTCCAAGGGGGT
>CD43_HsgRNA16
ACAGGATTGGCTGCAGTGACAGGAGGGTCA
>CD43_HsgRNA17
CCTTGCACCTTCTCCTCCTCTTTGGGGCAT
>CD43_HsgRNA18
CACTGCAGCCAATCCTGTGACAGACGGACC
>CD43_HsgRNA19
CACTGCAGCCAATCCTGTGACAGACGGACC
>CD43_HsgRNA20
CACTGCAGCCAATCCTGTGACAGACGGACC
>CD43_HsgRNA21
CACTGCAGCCAATCCTGTGACAGACGGACC
>CD43_HsgRNA22
CACTGCAGCCAATCCTGTGACAGACGGACC
>CD43_HsgRNA23
CACTGCAGCCAATCCTGTGACAGACGGACC
>CD43_HsgRNA24
CACTGCAGCCAATCCTGTGACAGACGGACC
>CD43_HsgRNA25
CACTGCAGCCAATCCTGTGACAGACGGACC
>CD43_HsgRNA26
ATTGGCTGCAGGTCCGTCTGTCACAGGATT
>CD43_HsgRNA27
AGATGCTGCAGTTCCGTCTGTCACAGGATT
>CD43_HsgRNA28
ATGGGCTGGCATTCTGGGCTTCAGAGGTAC
>CD43_HsgRNA29
TGGAGCTGTGATATGTGGGGTAGATGGTAG
>CD43_HsgRNA30
ACCTGGACCCAGCATGCCCCAAAGAGGAGG
>CD43_HsgRNA31
TCTGGGGCCCTCGAGTGAGATGCATGGACT
>CD43_HsgRNA32
TTGTGGTCTGCCCCCAGGGGCTGATGGTCT
>CD43_HsgRNA33
AGAGGTACTTGGAGCTGTGATATGTGGGGT
>CD43_HsgRNA34
TCTTTGGGGCATGCTGGGTCCAGGTGGCGA

>CD43_HsgRNA35
TTGATTCTTGGCTTGGTGACCTGGTGGTTA

(18) $\mathbb{S}_1^-$: 377 low on-target activity sgRNAs targeting CD13

>CD13_LsgRNA1
TCAGAAATAATACCAACAACTGGAGGGAGA
>CD13_LsgRNA2
GTCAAACAGCTCACTGATCTGGGCCGGCGT
>CD13_LsgRNA3
CATGAACCGCTGGACCCTGCAGATGGGCTT
>CD13_LsgRNA4
CCAGAACGATCTCTTCAGCACATCAGGCAA
>CD13_LsgRNA5
CGGTAACGATTCCACGCTTTACTTTGGTCC
>CD13_LsgRNA6
TAAAAACGTACAGGCCCCTGTCATTGGGGG
>CD13_LsgRNA7
GTGGAACTCAGTGACATTCCAGTTGGGGTC
>CD13_LsgRNA8
TGGAAATATAGAAGCCCTTGGCCATGGTGA
>CD13_LsgRNA9
TAGGAATCGGGTTTCAGCGTGTTGGGGAGG
>CD13_LsgRNA10
TCATAATGACCAGCAAAGAAGTTAAGGATG
>CD13_LsgRNA11
CGGTACACATCATTCAGCACCATGAGGTCT
>CD13_LsgRNA12
CAGAACACCATCTACCTGAACCTGTGGGAC
>CD13_LsgRNA13
AACTACACCCTCAGCCAGGGGCACAGGGTG
>CD13_LsgRNA14
CCTCACACCTTGCAGATCCGGATCTGGGCC
>CD13_LsgRNA15
GTGCACACGGCTGCCACGCCCAGGAGGATC
>CD13_LsgRNA16
GGAGACACTCACGGGTTATTATTGGGGTTC
>CD13_LsgRNA17
AGTGACAGGGACCTTATGGGCACTGGGAAT
>CD13_LsgRNA18
TTGGACAGGGCTGTCAGGTCCTTGGGGTGG
>CD13_LsgRNA19
AGTGACATTCCAGTTGGGGTCTTCTGGAAG
>CD13_LsgRNA20
AATGACCAGCAAAGAAGTTAAGGATGGGGC

>CD13_LsgRNA21
CTCCACCCACAGGCTGTGAACAACCGGTCC
>CD13_LsgRNA22
TTCAACGCCGGCGCCATGGAGAACTGGGGA
>CD13_LsgRNA23
GCGGACGGGGTGGTGGAGGCCACGGGGGAG
>CD13_LsgRNA24
AAAAACGTACAGGCCCCTGTCATTGGGGGT
>CD13_LsgRNA25
TCGAACTCGCTGTCCATCTCATACTGGCTG
>CD13_LsgRNA26
GAGAACTGGGGACTGGTGACCTACCGGGAG
>CD13_LsgRNA27
GGGGAGACACTCACGGGTTATTATTGGGGT
>CD13_LsgRNA28
CAGTAGACGGTGGACCGCAGGTTGGGGTGG
>CD13_LsgRNA29
TGCCAGACTTCAACGCCGGCGCCATGGAGA
>CD13_LsgRNA30
ACACAGATGCAGGCTGCAGATGCCCGGAAG
>CD13_LsgRNA31
TATGAGATGGACAGCGAGTTCGAGGGGGAG
>CD13_LsgRNA32
GGCCAGCAAGTACGTGGACATCTTGGGCGT
>CD13_LsgRNA33
CCTCAGCCACCACCAACCCCGCCTCGGCCA
>CD13_LsgRNA34
AGGGAGCCCTTGAGGTGCACCACCAGGTAC
>CD13_LsgRNA35
AGGCAGCGGAGCACTCACCTGGCCAGGTTG
>CD13_LsgRNA36
GAGGAGCGGGCTGCACCTTGCTGTAGGAGA
>CD13_LsgRNA37
TCTCAGCGTCACCCGGTAGGAATCGGGTTT
>CD13_LsgRNA38
CACCAGCTCAGTCTTGTCAATGTCGGGGGG
>CD13_LsgRNA39
GAGGAGGACAGGGGGTCGAACAGCAGGGAG
>CD13_LsgRNA40
TTCTAGGCCATCCCTGTCATCAATCGGGCA
>CD13_LsgRNA41
TCCGAGGCGGGTGTGGACAGCGGGTGGGAG
>CD13_LsgRNA42
GCCCAGGGTGCAGTACTCACCGCCAGGCCC

>CD13_LsgRNA43
GCACAGGGTGGTCCTGCGTGGTGTGGGAGG
>CD13_LsgRNA44
GCCCAGTGCCATTGCGGCGGGCCACGGCGA
>CD13_LsgRNA45
ACGGAGTTCCAGAGTGTGAGGAGATGGTCT
>CD13_LsgRNA46
TTCCAGTTGGGGTCTTCTGGAAGTGGGGTG
>CD13_LsgRNA47
TGCCATCAGCACCGCCTGCTCCAACGGAGT
>CD13_LsgRNA48
CATAATCGCCGTGGCCCGCCGCAATGGCAC
>CD13_LsgRNA49
TGGCATCGCCTCCCCAGACCAGATTGGCCT
>CD13_LsgRNA50
CCCCATCTGCTCACTTGAATTCTGAGGGGC
>CD13_LsgRNA51
AATGATCTGTGCCCGATTGATGACAGGGAT
>CD13_LsgRNA52
ATTAATGACGCCTTCAACCTGGCCAGGTGA
>CD13_LsgRNA53
GTTCATGATGTCCCGCACGGTGGTGGGGAG
>CD13_LsgRNA54
TACCATGCACCTCCGTACCTTCATGGGGCC
>CD13_LsgRNA55
CTTCATGGCCGGCTCATCGAAGCATGGGAA
>CD13_LsgRNA56
CTCCATGGCGCCGGCGTTGAAGTCTGGCAG
>CD13_LsgRNA57
CCTGATGTGCTGAAGAGATCGTTCTGGGCT
>CD13_LsgRNA58
TATTATTTCTGAAGTGAATGAAGAGGGGTG
>CD13_LsgRNA59
ACTGCAACGCTATCGCCCAGGGCGGGGAGG
>CD13_LsgRNA60
GCTCCAACGGAGTTCCAGAGTGTGAGGAGA
>CD13_LsgRNA61
ACCTCAATGTGACGGGCTATTACCGGGTGA
>CD13_LsgRNA62
TGTGCACAATCATCGCACTGTCAGTGGTGT
>CD13_LsgRNA63
AGGTCACCAGTCCCCAGTTCTCCATGGCGC
>CD13_LsgRNA64
AGAACACCATCTACCTGAACCTGTGGGACC

>CD13_LsgRNA65
TGACCACCCGCTCCTTGTTGCTGCTGGAGG
>CD13_LsgRNA66
ACTACACCCTCAGCCAGGGGCACAGGGTGG
>CD13_LsgRNA67
GGACCACCCTGTGCCCCTGGCTGAGGGTGT
>CD13_LsgRNA68
CCAGCACCGTCCGTTTCACCTGCAAGGAGG
>CD13_LsgRNA69
CTCACACCTTGCAGATCCGGATCTGGGCCC
>CD13_LsgRNA70
CCCGCACGGTGGTGGGGAGTTGGATGGACC
>CD13_LsgRNA71
GGAGCACTCACCTGGCCAGGTTGAAGGCGT
>CD13_LsgRNA72
ATGGCACTGGGCCGGGCCCAGATCCGGATC
>CD13_LsgRNA73
TGGTCACTGTGATTGCTCATGAGCTGGCCC
>CD13_LsgRNA74
ACCCCACTTCCAGAAGACCCCAACTGGAAT
>CD13_LsgRNA75
CCATCAGAGATGGCAGACAGCAGCAGGACT
>CD13_LsgRNA76
GCGCCAGAGTGACAGGGACCTTATGGGCAC
>CD13_LsgRNA77
TGACCAGCAAAGAAGTTAAGGATGGGGCCC
>CD13_LsgRNA78
AGGCCAGCAAGTACGTGGACATCTTGGGCG
>CD13_LsgRNA79
ATACCAGCACGGGGACCCTTTCCCAGGAGC
>CD13_LsgRNA80
CCTCCAGCAGCAACAAGGAGCGGGTGGTCA
>CD13_LsgRNA81
CGAACAGCAGGGAGTTCTCCCGGTAGGTCA
>CD13_LsgRNA82
TGGACAGCGAGTTCGAGGGGGAGTTGGCAG
>CD13_LsgRNA83
GTCTCAGCGTCACCCGGTAGGAATCGGGTT
>CD13_LsgRNA84
CCACCAGCTCAGTCTTGTCAATGTCGGGGG
>CD13_LsgRNA85
TGGGCAGCTGGCTTACCAAGTTCCAGGTGG
>CD13_LsgRNA86
GGCACAGGGTGGTCCTGCGTGGTGTGGGAG

>CD13_LsgRNA87
GGTTCAGGTAGATGGTGTTCTGGTAGGCAA
>CD13_LsgRNA88
GCCACAGGTCATTCCACCACTCTATGGTCA
>CD13_LsgRNA89
CTGACAGTGCGATGATTGTGCACACGGCTG
>CD13_LsgRNA90
ATTCCAGTTGGGGTCTTCTGGAAGTGGGGT
>CD13_LsgRNA91
ATCTCATACTGGCTGTCCTTCACCAGGGAG
>CD13_LsgRNA92
GGTTCATGATGTCCCGCACGGTGGTGGGGA
>CD13_LsgRNA93
CTACCATGCACCTCCGTACCTTCATGGGGC
>CD13_LsgRNA94
AGATCATTAATGACGCCTTCAACCTGGCCA
>CD13_LsgRNA95
CCGACATTGACAAGACTGAGCTGGTGGAGC
>CD13_LsgRNA96
GTAACATTGGAATCGGGGTCAAGGAGGAAG
>CD13_LsgRNA97
TGGTCCAAGGTGGTGGCCGAGGCGGGGTTG
>CD13_LsgRNA98
ATTTCCAAGTCCCTGGGCATCCTGGGGATC
>CD13_LsgRNA99
AGGACCACCCTGTGCCCCTGGCTGAGGGTG
>CD13_LsgRNA100
GCTGCCACGCCCAGGAGGATCCCCAGGATG
>CD13_LsgRNA101
GATTCCACGCTTTACTTTGGTCCAAGGTGG
>CD13_LsgRNA102
TTCCCCAGAACTACCTGAAGAAGCAGGTCA
>CD13_LsgRNA103
AGCGCCAGAGTGACAGGGACCTTATGGGCA
>CD13_LsgRNA104
ATGACCAGCAAAGAAGTTAAGGATGGGGCC
>CD13_LsgRNA105
GTGCCCATAAGGTCCCTGTCACTCTGGCGC
>CD13_LsgRNA106
CCTCCCCACCATCACCATGGCCAAGGGCTT
>CD13_LsgRNA107
CCACCCCAGGGCGCCTCAGTCCTCAGGATG
>CD13_LsgRNA108
GGGCCCCATCCTTAACTTCTTTGCTGGTCA

>CD13_LsgRNA109
GGATCCCCAGGATGCCCAGGGACTTGGAAA
>CD13_LsgRNA110
CCAACCCCGCCTCGGCCACCACCTTGGACC
>CD13_LsgRNA111
CTGACCCCTCCCCCCACAGTGGTTCGGGAA
>CD13_LsgRNA112
GTCACCCCTGGGGCAGGTACAGCGAGGTTA
>CD13_LsgRNA113
ATGTCCCGCACGGTGGTGGGGAGTTGGATG
>CD13_LsgRNA114
CCCACCCGCTGTCCACACCCGCCTCGGAGA
>CD13_LsgRNA115
CACACCCTACCCACTCCCAAAATCAGGTGA
>CD13_LsgRNA116
TGACCCCTCCCCCCACAGTGGTTCGGGAAC
>CD13_LsgRNA117
ATCTCCGAGGCGGGTGTGGACAGCGGGTGG
>CD13_LsgRNA118
TGGACCGCAGGTTGGGGTGGATCCTGGTGT
>CD13_LsgRNA119
TGGCCCGCCGCAATGGCACTGGGCCGGGCC
>CD13_LsgRNA120
CCACCCGCTCCTTGTTGCTGCTGGAGGAGG
>CD13_LsgRNA121
GGGCCCGGCCCAGTGCCATTGCGGCGGGCC
>CD13_LsgRNA122
TAGCCCGTCACATTGAGGTTCAGCAGGACC
>CD13_LsgRNA123
ACACCCTCAGCCAGGGGCACAGGGTGGTCC
>CD13_LsgRNA124
TCCTCCTCCAGCAGCAACAAGGAGCGGGTG
>CD13_LsgRNA125
CTGACCTCCTGCAGGTGGTCCCACAGGTTC
>CD13_LsgRNA126
GCATCCTGAGGACTGAGGCGCCCTGGGGTG
>CD13_LsgRNA127
GGGTCCTGCTGAACCTCAATGTGACGGGCT
>CD13_LsgRNA128
GTGACCTGCTTCTTCAGGTAGTTCTGGGGA
>CD13_LsgRNA129
GCATCCTGGGGATCCTCCTGGGCGTGGCAG
>CD13_LsgRNA130
TGAACCTGTGGGACCACCTGCAGGAGGTCA

>CD13_LsgRNA131
CTGTCCTTCACCAGGGAGCCCTTGAGGTGC
>CD13_LsgRNA132
GGGTCGAACAGCAGGGAGTTCTCCCGGTAG
>CD13_LsgRNA133
TCATCGAAGCATGGGAAGGACTTCCGGGCA
>CD13_LsgRNA134
GAGGCGAAGCCCTCGTTCAGCCACAGGTCA
>CD13_LsgRNA135
CCCCCGACATTGACAAGACTGAGCTGGTGG
>CD13_LsgRNA136
TCCCCGAGATGGGGGTCTACCTGGTGGGCC
>CD13_LsgRNA137
GCTCCGAGGTCTATGGCCCCATGAAGGTAC
>CD13_LsgRNA138
ACGGCGATTATGCCCTGAACGTGACGGGCC
>CD13_LsgRNA139
CCGGCGCCATGGAGAACTGGGGACTGGTGA
>CD13_LsgRNA140
GGCCCGCCGCAATGGCACTGGGCCGGGCCC
>CD13_LsgRNA141
TCAACGCCGGCGCCATGGAGAACTGGGGAC
>CD13_LsgRNA142
ATGGCGCCGGCGTTGAAGTCTGGCAGGCCA
>CD13_LsgRNA143
GCTTCGCCTCCTACGTGGAGTACCTGGGTG
>CD13_LsgRNA144
CACCCGCCTCGGAGATCAACACGCCGGCCC
>CD13_LsgRNA145
GCAACGCTATCGCCCAGGGCGGGGAGGAGG
>CD13_LsgRNA146
AACACGCTGAAACCCGATTCCTACCGGGTG
>CD13_LsgRNA147
TACTCGCTGCGGTAGAAGCCCGCCAGGTCA
>CD13_LsgRNA148
TCCACGCTTTACTTTGGTCCAAGGTGGTGG
>CD13_LsgRNA149
GGCCCGGCCCAGTGCCATTGCGGCGGGCCA
>CD13_LsgRNA150
CGGACGGGGTGGTGGAGGCCACGGGGGAGC
>CD13_LsgRNA151
GAATCGGGTTTCAGCGTGTTGGGGAGGCGG
>CD13_LsgRNA152
GGTACGGTCTCAGCGTCACCCGGTAGGAAT

>CD13_LsgRNA153
TAGACGGTGGACCGCAGGTTGGGGTGGATC
>CD13_LsgRNA154
AAAACGTACAGGCCCCTGTCATTGGGGGTG
>CD13_LsgRNA155
AGACCGTACCTCACCCCCAATGACAGGGGC
>CD13_LsgRNA156
ATGGCGTCAAACAGCTCACTGATCTGGGCC
>CD13_LsgRNA157
GTCACGTTCAGGGCATAATCGCCGTGGCCC
>CD13_LsgRNA158
GCTTCTACCGCAGCGAGTACATGGAGGGCA
>CD13_LsgRNA159
GAAGCTCAACTACACCCTCAGCCAGGGGCA
>CD13_LsgRNA160
CCCACTCACCTTTGGGAAGCATGTTGGACA
>CD13_LsgRNA161
TCTGCTCACTTGAATTCTGAGGGGCGGGTA
>CD13_LsgRNA162
CCAGCTCAGTCTTGTCAATGTCGGGGGGCT
>CD13_LsgRNA163
CCTCCTCCAGCAGCAACAAGGAGCGGGTGG
>CD13_LsgRNA164
AGAGCTCCCACTCACTGGTCCATCAGGTTT
>CD13_LsgRNA165
TGGCCTCCTTGCAGGTGAAACGGACGGTGC
>CD13_LsgRNA166
CCCGCTCCTTGTTGCTGCTGGAGGAGGACA
>CD13_LsgRNA167
CACACTCTGGAACTCCGTTGGAGCAGGCGG
>CD13_LsgRNA168
GGTGCTGACTATGCGGAGCCCACCTGGAAC
>CD13_LsgRNA169
CGGGCTGCACCTTGCTGTAGGAGATGGCGT
>CD13_LsgRNA170
CCATCTGCTCACTTGAATTCTGAGGGGCGG
>CD13_LsgRNA171
CAGGCTGCTCAGGGCGGCCTCCCAGGGCAT
>CD13_LsgRNA172
GGTCCTGCTGAACCTCAATGTGACGGGCTA
>CD13_LsgRNA173
CCTGCTGCTGTCTGCCATCTCTGATGGATG
>CD13_LsgRNA174
TGACCTGCTTCTTCAGGTAGTTCTGGGGAA

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(19) $\mathbb{S}_2^-$: 218 low on-target activity sgRNAs targeting CD15

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ATGTGACCGTGGACGTGTTCGGCCGGGGCG
>CD15_LsgRNA116
TGGCGACCTCCAGCCCCAGGCCCCCGGGCC
>CD15_LsgRNA117
TCGCGACGGGGTTGGCGACGCCCAGGGCAG
>CD15_LsgRNA118
CAAAGACGTCCGAGTCCGCCCGGTAGGAGA
>CD15_LsgRNA119
TGGTGAGCCACTGGGACGAGCGCCAGGCCC
>CD15_LsgRNA120
GTACGAGGCCAGGGAGGAGGCACTTGGGAA
>CD15_LsgRNA121
CTTCGAGTCGCCCTCGCACTCCCCGGGGCT
>CD15_LsgRNA122
AGCAGCACGCCCACCGGTCGCGACGGGGTT
>CD15_LsgRNA123
GGGGGCAGCTGCCGCCGCTGCCCTGGGCGT
>CD15_LsgRNA124
GCCGGCAGTCAGGGGGCGGCCTCGGGGCGC
>CD15_LsgRNA125
GGCCGCCAGCACACAGACGGTCCATGGCAG
>CD15_LsgRNA126
GGCTGCCATGGACCGTCTGTGTGCTGGCGG

>CD15_LsgRNA127
GGATGCCCCAGGGCGGGGGCCAGTCGGGGG
>CD15_LsgRNA128
ACTGGCCCCCGCCCTGGGGCATCCAGGCGC
>CD15_LsgRNA129
GCTGGCCCGGGGGCCTGGGGCTGGAGGTCG
>CD15_LsgRNA130
TGGCGCCGAGGCCGGGGGCTGCCATGGACC
>CD15_LsgRNA131
CGCCGCCGCCGTCGGCGAGCCCCACGGTGC
>CD15_LsgRNA132
GTGCGCCTGGATGCCCCAGGGCGGGGGCCA
>CD15_LsgRNA133
TCAGGCCTGGCCCCGCCACTGTCCAGGAAA
>CD15_LsgRNA134
GGGGGCCTGGGGCTGGAGGTCGCCAGGGCT
>CD15_LsgRNA135
TCTGGCGCAACGCGTTGCTCGCTGGGGCGG
>CD15_LsgRNA136
GTGTGCGCCTGGATGCCCCAGGGCGGGGGC
>CD15_LsgRNA137
GGCGGCGCGGGTGGCGCCGAGGCCGGGGGC
>CD15_LsgRNA138
ATCTGCGCGTGTTGGACTACGAGGAGGCAG
>CD15_LsgRNA139
CGGGGCGCTATCGCGCCCCCCGAAGGGCTC
>CD15_LsgRNA140
GACGGCGGCGGCGGGCGGGCGGCGCGGGTG
>CD15_LsgRNA141
CGGCGCGGGTGGCGCCGAGGCCGGGGGCTG
>CD15_LsgRNA142
CGTTGCTCGCTGGGGCGGTGCCGGTGGTGC
>CD15_LsgRNA143
AAGCGCTCGTAGTTGGCACGGTCTGGGCCC
>CD15_LsgRNA144
GGACGCTCTCCTACCGGGCGGACTCGGACG
>CD15_LsgRNA145
CGGCGCTGATCACCTACGCTTGCTGGGGGC
>CD15_LsgRNA146
CAGCGCTGCCTGTTCGCGCCATGGGGGCAC
>CD15_LsgRNA147
AGGTGCTGCGAGTTCTCGAAAGCCAGGTAG
>CD15_LsgRNA148
CAGAGCTTCTCGGTGATATAATCCAGGTGC

>CD15_LsgRNA149
TCGAGGAAAAGCAGGTACGAGGCCAGGGAG
>CD15_LsgRNA150
TCCAGGAAACAGGGGCTGGTGGCATGGGTG
>CD15_LsgRNA151
TGTTGGACTACGAGGAGGCAGCGGCGGCGG
>CD15_LsgRNA152
CCGAGGAGGTGGATCTGCGCGTGTTGGACT
>CD15_LsgRNA153
TGGGGGCACCGTGGGGCTCGCCGACGGCGG
>CD15_LsgRNA154
CCGGGGCAGCCGGTGCCCGAAATTGGGCTC
>CD15_LsgRNA155
TGGGGGCAGCTGCCGCCGCTGCCCTGGGCG
>CD15_LsgRNA156
AGCCGGCAGTCAGGGGGCGGCCTCGGGGCG
>CD15_LsgRNA157
CAGTGGCCCGCTACAAGTTCTACCTGGCTT
>CD15_LsgRNA158
TGGCGGCCGCCGGCTTGACGTGTACGGCGC
>CD15_LsgRNA159
GCCAGGCCTGAGGGCGGGTCGCCGGGGTGG
>CD15_LsgRNA160
GGTTGGCGACGCCCAGGGCAGCGGCGGCAG
>CD15_LsgRNA161
TAGCGGCGATAGACCGCGGGGTTGCGGTCG
>CD15_LsgRNA162
CTCTGGCGCAACGCGTTGCTCGCTGGGGCG
>CD15_LsgRNA163
TCCAGGCGCACACTGCCGAGGAGGTGGATC
>CD15_LsgRNA164
GGGCGGCGCGGGTGGCGCCGAGGCCGGGGG
>CD15_LsgRNA165
TCGGGGCGCTATCGCGCCCCCCGAAGGGCT
>CD15_LsgRNA166
AGCCGGCGGCCGCCAGCACACAGACGGTCC
>CD15_LsgRNA167
CAGTGGCGGGGCCAGGCCTGAGGGCGGGTC
>CD15_LsgRNA168
TGTTGGCTCAGTTGGTGGTAGTAGCGGACC
>CD15_LsgRNA169
GTGGGGCTCGCCGACGGCGGCGGCGGGCGG
>CD15_LsgRNA170
CGCGGGGCACAAAGCGCTCGTAGTTGGCAC

>CD15_LsgRNA171
GCCGGGGCAGCCGGTGCCCGAAATTGGGCT
>CD15_LsgRNA172
GGGCGGGCGGCGCGGGTGGCGCCGAGGCCG
>CD15_LsgRNA173
CGTGGGGCTCGCCGACGGCGGCGGCGGGCG
>CD15_LsgRNA174
CGCTGGGGCGGTGCCGGTGGTGCTGGGCCC
>CD15_LsgRNA175
TTCGGGGGGCGCGATAGCGCCCCGAGGCCG
>CD15_LsgRNA176
GGGCGGGTCGCCGGGGTGGCTTCTGGGGTA
>CD15_LsgRNA177
TGGTGGTAGTAGCGGACCCGGGCCTGGCGC
>CD15_LsgRNA178
GGCGGGTCGCCGGGGTGGCTTCTGGGGTAG
>CD15_LsgRNA179
CACTGTCCAGGAAACAGGGGCTGGTGGCAT
>CD15_LsgRNA180
GGGCGTCGCCAACCCCGTCGCGACCGGTGG
>CD15_LsgRNA181
GACCGTCTGTGTGCTGGCGGCCGCCGGCTT
>CD15_LsgRNA182
GACCGTGGACGTGTTCGGCCGGGGCGGGCC
>CD15_LsgRNA183
CACCGTGGGGCTCGCCGACGGCGGCGGCGG
>CD15_LsgRNA184
CACTGTGTGCAGGAGCCCAATTTCGGGCAC
>CD15_LsgRNA185
GGACGTGTTCGGCCGGGGCGGGCCGGGGCA
>CD15_LsgRNA186
ACGCGTTGCTCGCTGGGGCGGTGCCGGTGG
>CD15_LsgRNA187
GCGTGTTGGACTACGAGGAGGCAGCGGCGG
>CD15_LsgRNA188
CGGGGTTGGCGACGCCCAGGGCAGCGGCGG
>CD15_LsgRNA189
TTCATCCAAACCCAGCGCTGGCCCGGGGGC
>CD15_LsgRNA190
ACGGTCCATGGCAGCCCCCGGCCTCGGCGC
>CD15_LsgRNA191
TGTTTCCTGGACAGTGGCGGGGCCAGGCCT
>CD15_LsgRNA192
GGGCTCGCCGACGGCGGCGGCGGGCGGGCG

>CD15_LsgRNA193
CTGTTCGCGCCATGGGGGCACCGTGGGGCT
>CD15_LsgRNA194
GGACTCGGACGTCTTTGTGCCTTATGGCTA
>CD15_LsgRNA195
GACCTCGTGAAGGGGCCCCCCGACTGGCCC
>CD15_LsgRNA196
GCGGTCTATCGCCGCTACTTCCACTGGCGC
>CD15_LsgRNA197
TGGATCTGCGCGTGTTGGACTACGAGGAGG
>CD15_LsgRNA198
ATGTTGAAGCGCAGCCGGCAGTCAGGGGGC
>CD15_LsgRNA199
CATGTGACCGTGGACGTGTTCGGCCGGGGC
>CD15_LsgRNA200
GCGCTGATCACCTACGCTTGCTGGGGGCAG
>CD15_LsgRNA201
CCCATGCCACCAGCCCCTGTTTCCTGGACA
>CD15_LsgRNA202
AGTGTGCGCCTGGATGCCCCAGGGCGGGGG
>CD15_LsgRNA203
GTGCTGCTGTGGTGGGAGCCCTTCGGGGGG
>CD15_LsgRNA204
ACCGTGGACGTGTTCGGCCGGGGCGGGCCG
>CD15_LsgRNA205
AGCCTGGCAAGTAACCTCTTCAACTGGACG
>CD15_LsgRNA206
CTGGTGGCATGGGTGGTGAGCCACTGGGAC
>CD15_LsgRNA207
GCTCTGGCGCAACGCGTTGCTCGCTGGGGC
>CD15_LsgRNA208
TCGCTGGGGCGGTGCCGGTGGTGCTGGGCC
>CD15_LsgRNA209
ACGCTGTCCACATCACCTCCTTCTGGGACG
>CD15_LsgRNA210
CTGCTGTGGTGGGAGCCCTTCGGGGGGCGC
>CD15_LsgRNA211
CCACTGTGTGCAGGAGCCCAATTTCGGGCA
>CD15_LsgRNA212
GACGTGTTCGGCCGGGGCGGGCCGGGGCAG
>CD15_LsgRNA213
CCTGTTCGCGCCATGGGGGCACCGTGGGGC
>CD15_LsgRNA214
GATGTTGAAGCGCAGCCGGCAGTCAGGGGG

>CD15_LsgRNA215
TTACTTGCCAGGCTTCGCAGCCCCGGGGAG
>CD15_LsgRNA216
TCAGTTGGTGGTAGTAGCGGACCCGGGCCT
>CD15_LsgRNA217
TGCTTTTCCTCGACCGCAACCCCGCGGTCT
>CD15_LsgRNA218
TGGCTTTCGAGAACTCGCAGCACCTGGATT

(20) $\mathbb{S}_3^-$: 126 low on-target activity sgRNAs targeting CD33

>CD33_LsgRNA1
GAGGAAAGCAGCCAGGACAGCAGTGGGCAG
>CD33_LsgRNA2
ATCCAAATTTCTGGCTGCAAGTGCAGGAGT
>CD33_LsgRNA3
CAGGAATGACACCCACCCTACCACAGGGTC
>CD33_LsgRNA4
GGAAACAAGAGACCAGAGCAGGAGTGGTTC
>CD33_LsgRNA5
GCTCACAGGCCCAGGACACAGAGCAGGTCA
>CD33_LsgRNA6
ACTTACAGGTGACGTTGAGCTGGATGGTTC
>CD33_LsgRNA7
AGAGACCAGAGCAGGAGTGGTTCATGGGGC
>CD33_LsgRNA8
AATCACCCCACGGCCCCAGGACCACGGCAC
>CD33_LsgRNA9
GAGCACCGAGGAGTGAGTAGTCCTGGGGCC
>CD33_LsgRNA10
AAAAACCTGACCTGCTCTGTGTCCTGGGCC
>CD33_LsgRNA11
CCTGACCTGTCAGGTGAAGTTCGCTGGAGC
>CD33_LsgRNA12
AAGAACTCCCCAGTTCATGGTTACTGGTTC
>CD33_LsgRNA13
CAGCACTTACAGGTGACGTTGAGCTGGATG
>CD33_LsgRNA14
AGCCAGAAATTTGGATCCATAGCCAGGGCC
>CD33_LsgRNA15
ATCAAGAAGTACAGGAGGAGACTCAGGGCA
>CD33_LsgRNA16
CCACAGGCCCAAAATCCTCATCCCTGGCAC
>CD33_LsgRNA17
GGGGAGGCTGACCCTGTGGTAGGGTGGGTG

>CD33_LsgRNA18
GCTCAGGGAGCAGTTGTTCCTACTGGGATC
>CD33_LsgRNA19
ACTCAGGGCAGATTCCGCCTCCTTGGGGAT
>CD33_LsgRNA20
CAGCAGGGGCAGCAGTAGCAGCAGCGGCAT
>CD33_LsgRNA21
GGTCAGGTTGGTGCCGTGGTCCTGGGGCCG
>CD33_LsgRNA22
AGTGAGTAGTCCTGGGGCCCAGGGAGGTGG
>CD33_LsgRNA23
GAGTAGTCCTGGGGCCCAGGGAGGTGGGGG
>CD33_LsgRNA24
GAGGAGTGAGTAGTCCTGGGGCCCAGGGAG
>CD33_LsgRNA25
CTAGAGTGCCAGGGATGAGGATTTTGGGCC
>CD33_LsgRNA26
CCCCAGTTCATGGTTACTGGTTCCGGGAAG
>CD33_LsgRNA27
AGGGATAATGGTTCATACTTCTTTCGGATG
>CD33_LsgRNA28
AGGAATGACACCCACCCTACCACAGGGTCA
>CD33_LsgRNA29
GAAAATGCTCACATGAAGAAGATGAGGCAG
>CD33_LsgRNA30
TGTCATTCCTGCCCACTGCTGTCCTGGCTG
>CD33_LsgRNA31
CAAACAAGCTAGATCAAGAAGTACAGGAGG
>CD33_LsgRNA32
TGAGCACCGAGGAGTGAGTAGTCCTGGGGC
>CD33_LsgRNA33
CACTCACCGGGGAGGCTGACCCTGTGGTAG
>CD33_LsgRNA34
CAGCCACTCACCTGCCCACAGCAGGGGCAG
>CD33_LsgRNA35
AGACCAGAGCAGGAGTGGTTCATGGGGCCA
>CD33_LsgRNA36
AAAGCAGCCAGGACAGCAGTGGGCAGGAAT
>CD33_LsgRNA37
TCCCCAGCTCTCTGTGCATGTGACAGGTGA
>CD33_LsgRNA38
TGCTCAGGGAGCAGTTGTTCCTACTGGGAT
>CD33_LsgRNA39
GACTCAGGGCAGATTCCGCCTCCTTGGGGA

>CD33_LsgRNA40
CTGTCAGGTGAAGTTCGCTGGAGCTGGTGT
>CD33_LsgRNA41
AGGTCAGGTTGGTGCCGTGGTCCTGGGGCC
>CD33_LsgRNA42
TCCCCAGTTCATGGTTACTGGTTCCGGGAA
>CD33_LsgRNA43
TGCTCATAATCACCCCACGGCCCCAGGACC
>CD33_LsgRNA44
TGAGCATCGTAGACGCCAGGAGGAGGGATA
>CD33_LsgRNA45
GGTTCATGGGGCCATTGGAGGAGCTGGTGT
>CD33_LsgRNA46
AGTTCATGGTTACTGGTTCCGGGAAGGAGC
>CD33_LsgRNA47
GAGACCAGAGCAGGAGTGGTTCATGGGGCC
>CD33_LsgRNA48
TCTCCCATCAGAGTGAAGACCCACAGGAGG
>CD33_LsgRNA49
AAGACCCACAGGAGGAAAGCAGCCAGGACA
>CD33_LsgRNA50
CAGGCCCAGGACACAGAGCAGGTCAGGTTT
>CD33_LsgRNA51
GTTTCCCCACAGGGGCCCTGGCTATGGATC
>CD33_LsgRNA52
TGGGCCCCAGGACTACTCACTCCTCGGTGC
>CD33_LsgRNA53
GCTGCCCCCACCTCCCTGGGCCCCAGGACT
>CD33_LsgRNA54
TGCTCCCTGAGCATCGTAGACGCCAGGAGG
>CD33_LsgRNA55
AGCACCGAGGAGTGAGTAGTCCTGGGGCCC
>CD33_LsgRNA56
TTCTCCTCACTAGACTTGACCCACAGGCCC
>CD33_LsgRNA57
AAAACCTGACCTGCTCTGTGTCCTGGGCCT
>CD33_LsgRNA58
CTGTCCTGGCTGCTTTCCTCCTGTGGGTCT
>CD33_LsgRNA59
TAGTCCTGGGGCCCAGGGAGGTGGGGGCAG
>CD33_LsgRNA60
CCAGCGAACTTCACCTGACAGGTCAGGTTG
>CD33_LsgRNA61
AGTTCGCTGGAGCTGGTGTGACTACGGAGA

>CD33_LsgRNA62
TTCCCGGAACCAGTAACCATGAACTGGGGA
>CD33_LsgRNA63
ACCACGGCACCAACCTGACCTGTCAGGTGA
>CD33_LsgRNA64
AGATCGGGGGTGTTCCCTGCTCACAGGCCC
>CD33_LsgRNA65
GCAGCTGACAACCAGGAGAAGATCGGGGGT
>CD33_LsgRNA66
GCTACTGCTGCCCCTGCTGTGGGCAGGTGA
>CD33_LsgRNA67
TCACCTGTCACATGCACAGAGAGCTGGGGA
>CD33_LsgRNA68
CGAACTTCACCTGACAGGTCAGGTTGGTGC
>CD33_LsgRNA69
GGAGGAAAGCAGCCAGGACAGCAGTGGGCA
>CD33_LsgRNA70
GCCAGAAATTTGGATCCATAGCCAGGGCCC
>CD33_LsgRNA71
CAGGGAACACCCCCGATCTTCTCCTGGTTG
>CD33_LsgRNA72
TCAAGAAGTACAGGAGGAGACTCAGGGCAG
>CD33_LsgRNA73
CTACGACAAGAACTCCCCAGTTCATGGTTA
>CD33_LsgRNA74
ACCTGACAGGTCAGGTTGGTGCCGTGGTCC
>CD33_LsgRNA75
CGTAGACGCCAGGAGGAGGGATAATGGTTC
>CD33_LsgRNA76
TGAGGCAGAGACAAAGAGCGAGCAGGGCTG
>CD33_LsgRNA77
CACAGCCACTCACCTGCCCACAGCAGGGGC
>CD33_LsgRNA78
TTCCGCCTCCTTGGGGATCCCAGTAGGAAC
>CD33_LsgRNA79
TGCTGCTACTGCTGCCCCTGCTGTGGGCAG
>CD33_LsgRNA80
ACAAGCTAGATCAAGAAGTACAGGAGGAGA
>CD33_LsgRNA81
GGCAGCTGACAACCAGGAGAAGATCGGGGG
>CD33_LsgRNA82
TCCGGGAAGGAGCCATTATATCCAGGGACT
>CD33_LsgRNA83
AGCAGGAGTGGTTCATGGGGCCATTGGAGG

>CD33_LsgRNA84
ATGAGGCAGAGACAAAGAGCGAGCAGGGCT
>CD33_LsgRNA85
GGGAGGCTGACCCTGTGGTAGGGTGGGTGT
>CD33_LsgRNA86
TGCAGGGAAACAAGAGACCAGAGCAGGAGT
>CD33_LsgRNA87
TTCCGGGAAGGAGCCATTATATCCAGGGAC
>CD33_LsgRNA88
GCTGGGGAGATTTGTAACTGTATTTGGTAC
>CD33_LsgRNA89
ACCGGGGAGGCTGACCCTGTGGTAGGGTGG
>CD33_LsgRNA90
CTCAGGGCAGATTCCGCCTCCTTGGGGATC
>CD33_LsgRNA91
CACCGGGGAGGCTGACCCTGTGGTAGGGTG
>CD33_LsgRNA92
AACTGGGGAGTTCTTGTCGTAGTAGGGTAT
>CD33_LsgRNA93
GGGAGGTGGGGGCAGCTGACAACCAGGAGA
>CD33_LsgRNA94
GGTTGTCAGCTGCCCCCACCTCCCTGGGCC
>CD33_LsgRNA95
AGTAGTCCTGGGGCCCAGGGAGGTGGGGGC
>CD33_LsgRNA96
AGGAGTGAGTAGTCCTGGGGCCCAGGGAGG
>CD33_LsgRNA97
GTTGGTGCCGTGGTCCTGGGGCCGTGGGGT
>CD33_LsgRNA98
AGGAGTGGTTCATGGGGCCATTGGAGGAGC
>CD33_LsgRNA99
CTCTGTGTCCTGGGCCTGTGAGCAGGGAAC
>CD33_LsgRNA100
CCGGGTTCTAGAGTGCCAGGGATGAGGATT
>CD33_LsgRNA101
ACCCTACCACAGGGTCAGCCTCCCCGGTGA
>CD33_LsgRNA102
TTCCTACTGGGATCCCCAAGGAGGCGGAAT
>CD33_LsgRNA103
TTCATACTTCTTTCGGATGGAGAGAGGAAG
>CD33_LsgRNA104
GTTGTCAGCTGCCCCCACCTCCCTGGGCCC
>CD33_LsgRNA105
CAGGTCAGGTTGGTGCCGTGGTCCTGGGGC

>CD33_LsgRNA106
CAGCTCCAGCGAACTTCACCTGACAGGTCA
>CD33_LsgRNA107
TTGTTCCTACTGGGATCCCCAAGGAGGCGG
>CD33_LsgRNA108
GCTGTCCTGGCTGCTTTCCTCCTGTGGGTC
>CD33_LsgRNA109
GTAGTCCTGGGGCCCAGGGAGGTGGGGGCA
>CD33_LsgRNA110
TTGATCTAGCTTGTTTGTGGCCACTGGAGA
>CD33_LsgRNA111
AGTATGAACCATTATCCCTCCTCCTGGCGT
>CD33_LsgRNA112
CTCCTGCACTTGCAGCCAGAAATTTGGATC
>CD33_LsgRNA113
AGGATGCCCCATCACTCACCGGGGAGGCTG
>CD33_LsgRNA114
TTGGTGCCGTGGTCCTGGGGCCGTGGGGTG
>CD33_LsgRNA115
CTGCTGCTACTGCTGCCCCTGCTGTGGGCA
>CD33_LsgRNA116
CCACTGGAGAGTCCCTGGATATAATGGCTC
>CD33_LsgRNA117
TCCCTGGATATAATGGCTCCTTCCCGGAAC
>CD33_LsgRNA118
GGAGTGGCCGGGTTCTAGAGTGCCAGGGAT
>CD33_LsgRNA119
GCCCTGGCTATGGATCCAAATTTCTGGCTG
>CD33_LsgRNA120
GAACTGGGGAGTTCTTGTCGTAGTAGGGTA
>CD33_LsgRNA121
ATAATGGTTCATACTTCTTTCGGATGGAGA
>CD33_LsgRNA122
GGGCTGTAACACCAGCTCCTCCAATGGCCC
>CD33_LsgRNA123
GCTCTGTGTCCTGGGCCTGTGAGCAGGGAA
>CD33_LsgRNA124
GGGGTGTTCCCTGCTCACAGGCCCAGGACA
>CD33_LsgRNA125
GTACTTCTTGATCTAGCTTGTTTGTGGCCA
>CD33_LsgRNA126
GGAGTTCTTGTCGTAGTAGGGTATGGGATG

(21) $\mathbb{S}_4^-$: 119 low on-target activity sgRNAs targeting CCDC101

>CCDC101_LsgRNA1
TGAGAAGTTCTGCAATGCGGGAATCGGCAG
>CCDC101_LsgRNA2
CCCCACAGCCCCAGGATGACTACTCGGTCC
>CCDC101_LsgRNA3
TCAAACAGGACCGAGTAGTCATCCTGGGGC
>CCDC101_LsgRNA4
ACTCACAGGCCCCCACCCCTCTGTGGGGCC
>CCDC101_LsgRNA5
GTGAACATCCAGAAGACCCATGAGCGGATG
>CCDC101_LsgRNA6
TGTCACCAGGCTTCCCGATCCACAGGGGCA
>CCDC101_LsgRNA7
GGCCACGCAGCTTTGTCCGGTAATAGGGAG
>CCDC101_LsgRNA8
TTCCACTGGGGCAGCGGGATGACACGGCGC
>CCDC101_LsgRNA9
GTGTAGAGGCCACGCAGCTTTGTCCGGTAA
>CCDC101_LsgRNA10
TAGAAGCAGGTAGTCTGGGGATACAGGGCC
>CCDC101_LsgRNA11
GGGCAGCCACCTTGTCTCCAGGTCTGGCCA
>CCDC101_LsgRNA12
GGGGAGGGGAATAGCCATCTGCATAGGAGG
>CCDC101_LsgRNA13
GGCCATGACCCTGCCCCTGTGGATCGGGAA
>CCDC101_LsgRNA14
AGGGATGGCCCCACAGAGGGGTGGGGGCCT
>CCDC101_LsgRNA15
AGTCATTGTAGAGACCGGCAATCTTGGCCG
>CCDC101_LsgRNA16
GAGACAAGGTGGCTGCCCGGGTGAAGGCCG
>CCDC101_LsgRNA17
CCCTCAATGTGGCTCAGAGATACGTGGTGG
>CCDC101_LsgRNA18
TTGTCACCAGGCTTCCCGATCCACAGGGGC
>CCDC101_LsgRNA19
CTCACAGGCCCCCACCCCTCTGTGGGGCCA
>CCDC101_LsgRNA20
TCTGCATAGGAGGTGTCTTCAAACAGGACC
>CCDC101_LsgRNA21
GGGTCATCAGCACCCCTCTGCGCATGGTCT
>CCDC101_LsgRNA22
CTGGCCACGTAGTCTCCTGAGGCAGGGATG

>CCDC101_LsgRNA23
GGATCCACTGCTCGTCCCCATCCACGGCCT
>CCDC101_LsgRNA24
AGGGCCAGCACGAGCTGCTCCTTCTGGAAC
>CCDC101_LsgRNA25
TCCCCCAGGAGACACACCCTGAGCCGGCGC
>CCDC101_LsgRNA26
CCTTCCCACAGCGGCCAAGATTGCCGGTCT
>CCDC101_LsgRNA27
CGTCCCCATCCACGGCCTTCACCCGGGCAG
>CCDC101_LsgRNA28
TCGTCCCCATCCACGGCCTTCACCCGGGCA
>CCDC101_LsgRNA29
GCCACCCCGGAAGACCATGCGCAGAGGGGT
>CCDC101_LsgRNA30
AGCACCCCTCTGCGCATGGTCTTCCGGGGT
>CCDC101_LsgRNA31
CCTGCCCCTGTGGATCGGGAAGCCTGGTGA
>CCDC101_LsgRNA32
CCACCCCGGAAGACCATGCGCAGAGGGGTG
>CCDC101_LsgRNA33
GCTGCCCGGGTGAAGGCCGTGGATGGGGAC
>CCDC101_LsgRNA34
GCACCCCTCTGCGCATGGTCTTCCGGGGTG
>CCDC101_LsgRNA35
CGGACCCTGAGGCCTTGTTCCAGAAGGAGC
>CCDC101_LsgRNA36
CCATCCCTGCCTCAGGAGACTACGTGGCCA
>CCDC101_LsgRNA37
GGCGCCGGCTCAGGGTGTGTCTCCTGGGGG
>CCDC101_LsgRNA38
CTGCCCGGGTGAAGGCCGTGGATGGGGACG
>CCDC101_LsgRNA39
AAGGCCGTGGATGGGGACGAGCAGTGGATC
>CCDC101_LsgRNA40
CACCCCTCTGCGCATGGTCTTCCGGGGTGG
>CCDC101_LsgRNA41
TTTTCCTTACAGGAAGAGCGTTCGCGGAGC
>CCDC101_LsgRNA42
TGCTCCTTCTGGAACAAGGCCTCAGGGTCC
>CCDC101_LsgRNA43
GGGACGAGCAGTGGATCCTGGCCGAGGTGG
>CCDC101_LsgRNA44
GCCACGCAGCTTTGTCCGGTAATAGGGAGA

>CCDC101_LsgRNA45
AGATCGCGGAAATCAAGTCTCTGTTGGAAG
>CCDC101_LsgRNA46
AGGGCGCGGTAGAAGCAGGTAGTCTGGGGA
>CCDC101_LsgRNA47
CAGTCGGCCATGACCCTGCCCCTGTGGATC
>CCDC101_LsgRNA48
GCATCGGCCTTGGCGGTTGTGTAGAGGCCA
>CCDC101_LsgRNA49
GCGCCGGCTCAGGGTGTGTCTCCTGGGGGA
>CCDC101_LsgRNA50
CACCCGGGCAGCCACCTTGTCTCCAGGTCT
>CCDC101_LsgRNA51
ACCACGTATCTCTGAGCCACATTGAGGGGA
>CCDC101_LsgRNA52
ACTACGTGGCCAGACCTGGAGACAAGGTGG
>CCDC101_LsgRNA53
TGCACTCAGCCTCTGCATCGGCCTTGGCGG
>CCDC101_LsgRNA54
CCGTCTCCGGGTTGGCCTTCCACTGGGGCA
>CCDC101_LsgRNA55
GTATCTCTGAGCCACATTGAGGGGAGGGGA
>CCDC101_LsgRNA56
TGTTCTCTGTCTGCATCCGCTCATGGGTCT
>CCDC101_LsgRNA57
TCCTCTGCAGTTTCTCCCTATTACCGGACA
>CCDC101_LsgRNA58
CCCTCTGCGCATGGTCTTCCGGGGTGGCTC
>CCDC101_LsgRNA59
AGACCTGGAGACAAGGTGGCTGCCCGGGTG
>CCDC101_LsgRNA60
AGCTCTGTGAGAAGTTCTGCAATGCGGGAA
>CCDC101_LsgRNA61
GTCTCTGTTGGAAGAGAGGCGGATTGGTGA
>CCDC101_LsgRNA62
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>CCDC101_LsgRNA63
CTCACTTGCACTCAGCCTCTGCATCGGCCT
>CCDC101_LsgRNA64
GTTTGAAGACACCTCCTATGCAGATGGCTA
>CCDC101_LsgRNA65
CTCAGAGATACGTGGTGGCTTGTAAGGAAC
>CCDC101_LsgRNA66
GCACGAGCTGCTCCTTCTGGAACAAGGCCT

>CCDC101_LsgRNA67
TCCCGATCCACAGGGGCAGGGTCATGGCCG
>CCDC101_LsgRNA68
CCCTGATCCATGCGCCCCCACAGCGGGTAA
>CCDC101_LsgRNA69
GCGGGATGACACGGCGCCGGCTCAGGGTGT
>CCDC101_LsgRNA70
TGCTGATGACCCTGCTGCAGCAGTCGGCCA
>CCDC101_LsgRNA71
CAGGGATGGCCCCACAGAGGGGTGGGGGCC
>CCDC101_LsgRNA72
TGGGGCAGCGGGATGACACGGCGCCGGCTC
>CCDC101_LsgRNA73
TGAGGCAGGGATGGCCCCACAGAGGGGTGG
>CCDC101_LsgRNA74
GTCTGCATCCGCTCATGGGTCTTCTGGATG
>CCDC101_LsgRNA75
TCTGGCCACGTAGTCTCCTGAGGCAGGGAT
>CCDC101_LsgRNA76
CGCTGCCCCAGTGGAAGGCCAACCCGGAGA
>CCDC101_LsgRNA77
GGCTGCCCGGGTGAAGGCCGTGGATGGGGA
>CCDC101_LsgRNA78
CAATGCGGGAATCGGCAGACACGAGGGCCA
>CCDC101_LsgRNA79
GGGCGCGGTAGAAGCAGGTAGTCTGGGGAT
>CCDC101_LsgRNA80
ACCCGCTGTGGGGGCGCATGGATCAGGGCG
>CCDC101_LsgRNA81
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GGCACAGCTCGATGTCCTGGCACTCGGTGC
>TADA2B_LsgRNA36
GCTCCATCACCTCTTGGGGAGTCCGGGAAG
>TADA2B_LsgRNA37
TGTACATCCACGGGAACCTGGGGAAGGCCT
>TADA2B_LsgRNA38
AGAACATCGCCCGTGACTACAATCTGGTGC
>TADA2B_LsgRNA39
TGAGCATGTACATCCACGGGAACCTGGGGA
>TADA2B_LsgRNA40
TCCACCAGCTGGTAGCCGTGGTAGCGGCGG
>TADA2B_LsgRNA41
TGCTCCATCACCTCTTGGGGAGTCCGGGAA
>TADA2B_LsgRNA42
ACCGCCGCTACCACGGCTACCAGCTGGTGG
>TADA2B_LsgRNA43
GGTACCGCTGCAGTTCTCGGATCTTGGCCC
>TADA2B_LsgRNA44
CTTCCCGGACTCCCCAAGAGGTGATGGAGC
>TADA2B_LsgRNA45
AGATCGAGCTGAAGCGCGCCCACGTGGACA
>TADA2B_LsgRNA46
AGTACGAGGCAGCGCGGCATAAACGGGAGA
>TADA2B_LsgRNA47
TCGGCGCCGGCCGAGAAGCACTCGGGGCAC
>TADA2B_LsgRNA48
GCAGCGCGGCATAAACGGGAGAAGAGGAAG
>TADA2B_LsgRNA49
GTCACGCGGTTGGGGATGGTGTCGGGGATG
>TADA2B_LsgRNA50
GAGTCGGCAGAGTACGAGGCAGCGCGGCAT
>TADA2B_LsgRNA51
TGGACGGCGGGCGCTTCACGCTCTGGGGGC

>TADA2B_LsgRNA52
TAGCCGGCTCCAAACGGGGAAAGGAGGACG
>TADA2B_LsgRNA53
GTGTCGGGGATGCAGGCCTTCCCCAGGTTC
>TADA2B_LsgRNA54
CACTCGGGGCACAGCTCGATGTCCTGGCAC
>TADA2B_LsgRNA55
CGAGCGGGGGAAGATGGCGGAGCTGGGGAA
>TADA2B_LsgRNA56
CACTCGGTGCAGCGGAAGCGCAGCGGGCTC
>TADA2B_LsgRNA57
CTCACGTAATGCTCCATCACCTCTTGGGGA
>TADA2B_LsgRNA58
CCGCCGTCCACCAGCTGGTAGCCGTGGTAG
>TADA2B_LsgRNA59
GCCGCTACCACGGCTACCAGCTGGTGGACG
>TADA2B_LsgRNA60
CGTCCTCCTTTCCCCGTTTGGAGCCGGCTA
>TADA2B_LsgRNA61
CGTACTCTGCCGACTCTTCCATCTTGGTGA
>TADA2B_LsgRNA62
CACGCTCTGGGGGCCCGAGGCCGAGGGCGG
>TADA2B_LsgRNA63
AGAACTGCAGCGGTACCGGCGAAACGGGAT
>TADA2B_LsgRNA64
ATGGCTGCCCACGTTGGTGCTTCCCGGACT
>TADA2B_LsgRNA65
AAGGCTGGCACCAGATTGTAGTCACGGGCG
>TADA2B_LsgRNA66
TGCGCTTCCGCTGCACCGAGTGCCAGGACA
>TADA2B_LsgRNA67
CAGCCTTCCTGGGGAAGGACAAGAAGGAGA
>TADA2B_LsgRNA68
TCTCCTTCTTGTCCTTCCCCAGGAAGGCTG
>TADA2B_LsgRNA69
AGGACTTTGTCCAGGTAGCTAGGAAGGCGG
>TADA2B_LsgRNA70
GTAGGAAGATATGGCTGCCCACGTTGGTGC
>TADA2B_LsgRNA71
GCTCGAAGCCTGGAAGGTTCTCAATGGCGG
>TADA2B_LsgRNA72
CGCTGAAGCGCAAGATCACCAAGGAGGAGA
>TADA2B_LsgRNA73
GGAAGAAGTACTGCGTGTACTGCCTGGCCG

>TADA2B_LsgRNA74
GACAGACCACACCTGTCCCAGCGGAGGCCC
>TADA2B_LsgRNA75
TAAAGACCACCTCCAGAAGCGGCAAGGAAT
>TADA2B_LsgRNA76
CACAGAGATGTCCAGCGGGGGCAGCGGGGT
>TADA2B_LsgRNA77
GTGAGAGGGGGCCTCCGCTGGGACAGGTGT
>TADA2B_LsgRNA78
TGGGGAGTCCGGGAAGCACCAACGTGGGCA
>TADA2B_LsgRNA79
ACGGGATCACCAAGATGGAAGAGTCGGCAG
>TADA2B_LsgRNA80
CAGAGATGTCCAGCGGGGGCAGCGGGGTGG
>TADA2B_LsgRNA81
ACATGCACAAAGAAAAAATGCTCCGGGCCA
>TADA2B_LsgRNA82
CGCGGCATAAACGGGAGAAGAGGAAGGAGA
>TADA2B_LsgRNA83
GGACGCCATCGAGCAGTTCGGCTTCGGAAA
>TADA2B_LsgRNA84
CGCTGCCCCCGCTGGACATCTCTGTGGCTG
>TADA2B_LsgRNA85
GTTCGCCGCCATTGAGAACCTTCCAGGCTT
>TADA2B_LsgRNA86
CTTTGCCGTCCTCCTTTCCCCGTTTGGAGC
>TADA2B_LsgRNA87
CGAAGCCTGGAAGGTTCTCAATGGCGGCGA
>TADA2B_LsgRNA88
ACCGGCGAAACGGGATCACCAAGATGGAAG
>TADA2B_LsgRNA89
CCTCGCGACTGGTCCAGCCGCCCTCGGCCT
>TADA2B_LsgRNA90
TCAGGCGCAGCTCCTTCTCCTCCTTGGTGA
>TADA2B_LsgRNA91
CTCGGCGCCGGCCGAGAAGCACTCGGGGCA
>TADA2B_LsgRNA92
GACGGCGGGCGCTTCACGCTCTGGGGGCCC
>TADA2B_LsgRNA93
GCGAGCGGGGGAAGATGGCGGAGCTGGGGA
>TADA2B_LsgRNA94
TCCAGCGGGGGCAGCGGGGTGGTGAGGCTG
>TADA2B_LsgRNA95
TCGAGCTCCTGTCAGATCGCGAGAAGGTGC

>TADA2B_LsgRNA96
TCACGCTCTGGGGGCCCGAGGCCGAGGGCG
>TADA2B_LsgRNA97
AGGCGCTGAAGCGCAAGATCACCAAGGAGG
>TADA2B_LsgRNA98
AGCAGCTGGGCTACATGCCGCTGCGGGATG
>TADA2B_LsgRNA99
ACCAGCTGGTAGCCGTGGTAGCGGCGGTGG
>TADA2B_LsgRNA100
TCGAGCTGTGCCCCGAGTGCTTCTCGGCCG
>TADA2B_LsgRNA101
AGATGGAAGAGTCGGCAGAGTACGAGGCAG
>TADA2B_LsgRNA102
GGAAGGACAAGAAGGAGAAGGAAAAGGCGC
>TADA2B_LsgRNA103
GAGGGGATTCCTTGCCGCTTCTGGAGGTGG
>TADA2B_LsgRNA104
GATCGGCCACCACCGCCGCTACCACGGCTA
>TADA2B_LsgRNA105
TGGGGGCCCGAGGCCGAGGGCGGCTGGACC
>TADA2B_LsgRNA106
AGGGGGCCTCCGCTGGGACAGGTGTGGTCT
>TADA2B_LsgRNA107
TCTCGGCGCCGGCCGAGAAGCACTCGGGGC
>TADA2B_LsgRNA108
GGACGGCGGGCGCTTCACGCTCTGGGGGCC
>TADA2B_LsgRNA109
CCACGGCTACCAGCTGGTGGACGGCGGGCG
>TADA2B_LsgRNA110
GCGGGGGCAGCGGGGTGGTGAGGCTGGGTG
>TADA2B_LsgRNA111
CCGAGGGCGGCTGGACCAGTCGCGAGGAGC
>TADA2B_LsgRNA112
GGTTGGGGATGGTGTCGGGGATGCAGGCCT
>TADA2B_LsgRNA113
GAGCGGGGGAAGATGGCGGAGCTGGGGAAG
>TADA2B_LsgRNA114
GGCTGGGTGAGAGGGGGCCTCCGCTGGGAC
>TADA2B_LsgRNA115
AGCGGGGTGGTGAGGCTGGGTGAGAGGGGG
>TADA2B_LsgRNA116
AACTGGTACAGCGGCCTCAGCTTCAGGCGC
>TADA2B_LsgRNA117
AGCTGGTAGCCGTGGTAGCGGCGGTGGTGG

>TADA2B_LsgRNA118
GACTGGTCCAGCCGCCCTCGGCCTCGGGCC
>TADA2B_LsgRNA119
GCTGGGTGAGAGGGGGCCTCCGCTGGGACA
>TADA2B_LsgRNA120
ATCTGGTGCCAGCCTTCCTGGGGAAGGACA
>TADA2B_LsgRNA121
GCGGGGTGGTGAGGCTGGGTGAGAGGGGGC
>TADA2B_LsgRNA122
GACAGGTGTGGTCTGTCACGCGGTTGGGGA
>TADA2B_LsgRNA123
TCACGTAATGCTCCATCACCTCTTGGGGAG
>TADA2B_LsgRNA124
CCAGGTAGCTAGGAAGGCGGCTTTTGGAGG
>TADA2B_LsgRNA125
ACTGGTCCAGCCGCCCTCGGCCTCGGGCCC
>TADA2B_LsgRNA126
TGTGGTCTGTCACGCGGTTGGGGATGGTGT
>TADA2B_LsgRNA127
CGGGGTGGTGAGGCTGGGTGAGAGGGGGCC
>TADA2B_LsgRNA128
GGCGGTGGTGGCCGATCTCGGCGCCGGCCG
>TADA2B_LsgRNA129
ACAGGTGTGGTCTGTCACGCGGTTGGGGAT
>TADA2B_LsgRNA130
ATAATAGTCTTCACAGTCACGTAGCGGGCT
>TADA2B_LsgRNA131
CTGCTCAGCCACAGAGATGTCCAGCGGGGG
>TADA2B_LsgRNA132
CGTCTCAGCTTCAAGACGCGTCCCTGGAGA
>TADA2B_LsgRNA133
CGGCTCCAAACGGGGAAAGGAGGACGGCAA
>TADA2B_LsgRNA134
AAGATCCGAGAACTGCAGCGGTACCGGCGA
>TADA2B_LsgRNA135
CCAGTCGCGAGGAGCAGCTGCTGCTGGACG
>TADA2B_LsgRNA136
GCGATCTGACAGGAGCTCGAAGCCTGGAAG
>TADA2B_LsgRNA137
TCCATCTTGGTGATCCCGTTTCGCCGGTAC
>TADA2B_LsgRNA138
AACATGCACAAAGAAAAAATGCTCCGGGCC
>TADA2B_LsgRNA139
GAACTGCAGCGGTACCGGCGAAACGGGATC

>TADA2B_LsgRNA140
GCTGTGCCCCGAGTGCTTCTCGGCCGGCGC
>TADA2B_LsgRNA141
TACCTGGACAAAGTCCTAAAGAAAAGGATT
>TADA2B_LsgRNA142
GCTCTGGGGGCCCGAGGCCGAGGGCGGCTG
>TADA2B_LsgRNA143
ACTTTGTCCAGGTAGCTAGGAAGGCGGCTT
>TADA2B_LsgRNA144
TCTCTGTGGCTGAGCAGCAGCAGCTGGGCT
>TADA2B_LsgRNA145
CAGGTGTGGTCTGTCACGCGGTTGGGGATG
>TADA2B_LsgRNA146
ATAATTAAAGACCACCTCCAGAAGCGGCAA
>TADA2B_LsgRNA147
ATGATTACGAGATCGAGTATGACCAGGATG
>TADA2B_LsgRNA148
TCCTTTCCCCGTTTGGAGCCGGCTAGGTTT
>TADA2B_LsgRNA149
GGGATTCCTTGCCGCTTCTGGAGGTGGTCT
>TADA2B_LsgRNA150
GTGCTTCTCGGCCGGCGCCGAGATCGGCCA
>TADA2B_LsgRNA151
GATTTTGAATTTCCTCACAGAAAGCGGCTG
>TADA2B_LsgRNA152
CTTCTTGTCCTTCCCCAGGAAGGCTGGCAC

(24) $\mathbb{S}_7^-$: 87 low on-target activity sgRNAs targeting TADA1

>TADA1_LsgRNA1
TTCAAAAAGATCGTACATGTTCACCGGAGG
>TADA1_LsgRNA2
AAGGAAAGCTTATCGGTTACGAGATGGTCA
>TADA1_LsgRNA3
ATTGAAAGGATCATCACGAAACTCTGGCAT
>TADA1_LsgRNA4
TTGTAAGCTACTACACTATTCTTCAGGTAT
>TADA1_LsgRNA5
CACAAATTGCTGGGCTCCTGAGAGAGGATT
>TADA1_LsgRNA6
CCACACAATGATGCTTCCCACTCGAGGCCA
>TADA1_LsgRNA7
AGCTACTACACTATTCTTCAGGTATGGCTG
>TADA1_LsgRNA8
TCATAGACTTCTCACACAGGATAATGGTAA

>TADA1_LsgRNA9
AAAAAGATCGTACATGTTCACCGGAGGCAA
>TADA1_LsgRNA10
GCAAAGATGCAGGTAGAGTGTCTCCGGAGC
>TADA1_LsgRNA11
CCGCAGCAAAACCTGGAAAACCCAAGGGAA
>TADA1_LsgRNA12
CAGGAGCCCAGCAATTTGTGGCAAAGGATC
>TADA1_LsgRNA13
CGCCAGCGCTTGGCAGCCAAGGAGGGGCTT
>TADA1_LsgRNA14
TTGAAGCTCATAGACTTCTCACACAGGATA
>TADA1_LsgRNA15
GAGAAGCTGGATTCTGACCAGCACAGGGAG
>TADA1_LsgRNA16
GCACAGGGAGCAGTAAAAGCTGGAGGGCTG
>TADA1_LsgRNA17
CTCGAGTGGGAAGCATCATTGTGTGGGAAC
>TADA1_LsgRNA18
GGGGATCCTTTGCCACAAATTGCTGGGCTC
>TADA1_LsgRNA19
CTAGATGGTGCTGGATCTTTGCCTTGGCCA
>TADA1_LsgRNA20
CACTATTCTTCAGGTATGGCTGCGGGGTCA
>TADA1_LsgRNA21
AAGACAAAGTTCACCGCCAGCGCTTGGCAG
>TADA1_LsgRNA22
ATTCCAGCCTCAAAATCCTCTCTCAGGAGC
>TADA1_LsgRNA23
CCGCCAGCGCTTGGCAGCCAAGGAGGGGCT
>TADA1_LsgRNA24
AGCACAGGGAGCAGTAAAAGCTGGAGGGCT
>TADA1_LsgRNA25
CTTCCCACTCGAGGCCAGCTTGAAGGGAGA
>TADA1_LsgRNA26
ACCGCCAGCGCTTGGCAGCCAAGGAGGGGC
>TADA1_LsgRNA27
GCTTCCCACTCGAGGCCAGCTTGAAGGGAG
>TADA1_LsgRNA28
CACCCCCTGATGATGCTGAGCAGCAGGCTG
>TADA1_LsgRNA29
TTCTCCCTTCAAGCTGGCCTCGAGTGGGAA
>TADA1_LsgRNA30
TTCACCGCCAGCGCTTGGCAGCCAAGGAGG

>TADA1_LsgRNA31
AGCCCCTCCTTGGCTGCCAAGCGCTGGCGG
>TADA1_LsgRNA32
GCAGCCTGCTGCTCAGCATCATCAGGGGGT
>TADA1_LsgRNA33
TCTCCCTTCAAGCTGGCCTCGAGTGGGAAG
>TADA1_LsgRNA34
CCCTCCTTGGCTGCCAAGCGCTGGCGGTGA
>TADA1_LsgRNA35
TGGCCGCCTCCAGCTCGCTCACAAAGGTCG
>TADA1_LsgRNA36
GCTGCGGGGTCACGTTACTGCCAAAGGCAT
>TADA1_LsgRNA37
GTCACTATCATTCTCCCTTCAAGCTGGCCT
>TADA1_LsgRNA38
TACACTATTCTTCAGGTATGGCTGCGGGGT
>TADA1_LsgRNA39
CTCTCTCAGGAGCCCAGCAATTTGTGGCAA
>TADA1_LsgRNA40
ACAACTGACGTCAGTATATCTTTAAGGTGA
>TADA1_LsgRNA41
CAGCCTGCTGCTCAGCATCATCAGGGGGTG
>TADA1_LsgRNA42
GGTGCTGGATCTTTGCCTTGGCCAGGGGGT
>TADA1_LsgRNA43
GTAGCTTACAACAACTTAATAGAAAGGTAA
>TADA1_LsgRNA44
CGACCTTTGTGAGCGAGCTGGAGGCGGCCA
>TADA1_LsgRNA45
ATCTGACAACGCGTGAGAATGGCCAGGAGG
>TADA1_LsgRNA46
TGGCGACCTTTGTGAGCGAGCTGGAGGCGG
>TADA1_LsgRNA47
TAGTGACTGCTTATGAGCATGGGCTGGACA
>TADA1_LsgRNA48
TTAAGAGCATAGACAGTATGTGTAGGGATG
>TADA1_LsgRNA49
TGGGGATCCTTTGCCACAAATTGCTGGGCT
>TADA1_LsgRNA50
CGCAGCAAAACCTGGAAAACCCAAGGGAAA
>TADA1_LsgRNA51
CAAGGCAAAGATCCAGCACCATCTAGGAGA
>TADA1_LsgRNA52
TTTAGCACAGCAAAAGCCCCTCCTTGGCTG

>TADA1_LsgRNA53
ACCAGCACAGGGAGCAGTAAAAGCTGGAGG
>TADA1_LsgRNA54
GGCTGCACTCCTGCTGGCATGCTCCGGAGA
>TADA1_LsgRNA55
CTGAGCAGCAGGCTGCACTCCTGCTGGCAT
>TADA1_LsgRNA56
TGCAGCCTGCTGCTCAGCATCATCAGGGGG
>TADA1_LsgRNA57
TGCTGCTCAGCATCATCAGGGGGTGGGTGA
>TADA1_LsgRNA58
TTTTGCTGCGGAACCCCCTGGCCAAGGCAA
>TADA1_LsgRNA59
ATGGGCTGGACAATGTCACCGAGGAGGCTG
>TADA1_LsgRNA60
TGGTGCTGGATCTTTGCCTTGGCCAGGGGG
>TADA1_LsgRNA61
AGAAGCTGGATTCTGACCAGCACAGGGAGC
>TADA1_LsgRNA62
GCCAGGAGGAAATCATTGTGAGAATGGACT
>TADA1_LsgRNA63
TGCTGGATCTTTGCCTTGGCCAGGGGGTTC
>TADA1_LsgRNA64
GTAGGGATGACTTCCCTGTGCACCTGGGAT
>TADA1_LsgRNA65
CCAGGGCCTCGCTTAAGTTCTTCTTGGCCG
>TADA1_LsgRNA66
GCCAGGGGGTTCCGCAGCAAAACCTGGAAA
>TADA1_LsgRNA67
TTCTGTTCGTCAGAAATTTGATGTAGGTTG
>TADA1_LsgRNA68
AGCTGTTGTCTATGCTGTGGAGGTTGGTTT
>TADA1_LsgRNA69
CAAAGTTTCAAGTCGTCATCATCTTGGGGA
>TADA1_LsgRNA70
TATTGTTTCTGCCTCTGCAGATACTGGGCT
>TADA1_LsgRNA71
ACACTATTCTTCAGGTATGGCTGCGGGGTC
>TADA1_LsgRNA72
ACACTCTACCTGCATCTTTGCCTCCGGTGA
>TADA1_LsgRNA73
ACTGTCTATGCTCTTAACATTGAAAGGATC
>TADA1_LsgRNA74
ATCTTCTGCTTGAACCACAGCTTTAGGTTA

>TADA1_LsgRNA75
ATACTGACGTCAGTTGTGTCAAGAAGGAAA
>TADA1_LsgRNA76
TGTGTGAGAAGTCTATGAGCTTCAAGGTCA
>TADA1_LsgRNA77
CTGCTGCTCAGCATCATCAGGGGGTGGGTG
>TADA1_LsgRNA78
GTCTTGCTGCAGCTCTTCATGATTTGGATG
>TADA1_LsgRNA79
AGCCTGCTGCTCAGCATCATCAGGGGGTGG
>TADA1_LsgRNA80
GTGCTGGATCTTTGCCTTGGCCAGGGGGTT
>TADA1_LsgRNA81
GTTGTGTCAAGAAGGAAAGCTTATCGGTTA
>TADA1_LsgRNA82
AGAGTGTCTCCGGAGCATGCCAGCAGGAGT
>TADA1_LsgRNA83
AAGTTTCAAGTCGTCATCATCTTGGGGATC
>TADA1_LsgRNA84
CATGTTCACCGGAGGCAAAGATGCAGGTAG
>TADA1_LsgRNA85
ATATTTCTGTCTCCTAGATGGTGCTGGATC
>TADA1_LsgRNA86
AAAGTTTCAAGTCGTCATCATCTTGGGGAT
>TADA1_LsgRNA87
ATTGTTTCTGCCTCTGCAGATACTGGGCTA

(25) $\mathbb{S}_8^-$: 51 low on-target activity sgRNAs targeting HPRT1

>HPRT1_LsgRNA1
GGTGAAAAGGACCCCACGAAGTGTTGGATA
>HPRT1_LsgRNA2
TGATAAAATCTACAGTCATAGGAATGGATC
>HPRT1_LsgRNA3
AAAAAAAGTAATTCACTTACAGTCTGGCTT
>HPRT1_LsgRNA4
TTCCAAATCCTCAGCATAATGATTAGGTAT
>HPRT1_LsgRNA5
TTTTAACTAGAATGACCAGTCAACAGGGGA
>HPRT1_LsgRNA6
GCAAAATAAATCAAGGTCATAACCTGGTTC
>HPRT1_LsgRNA7
AAACAATGCAGACTTTGCTTTCCTTGGTCA
>HPRT1_LsgRNA8
GTCAACAGGGGACATAAAAGTAATTGGTGG

>HPRT1_LsgRNA9
TTTAACTAGAATGACCAGTCAACAGGGGAC
>HPRT1_LsgRNA10
ATGCAGACTTTGCTTTCCTTGGTCAGGCAG
>HPRT1_LsgRNA11
CGCCAGGGCTGCGGGTCGCCATAACGGAGC
>HPRT1_LsgRNA12
TGAAATTCCAGACAAGTTTGTTGTAGGATA
>HPRT1_LsgRNA13
AATCCAAAGATGGTCAAGGTCGCAAGGTAT
>HPRT1_LsgRNA14
AGCACACAGAGGGCTACAATGTGATGGCCT
>HPRT1_LsgRNA15
TGCTCACCACGACGCCAGGGCTGCGGGTCG
>HPRT1_LsgRNA16
TTTTCAGATTAGTGATGATGAACCAGGTTA
>HPRT1_LsgRNA17
TTTGCATACCTAATCATTATGCTGAGGATT
>HPRT1_LsgRNA18
TGCTCGAGATGTGATGAAGGAGATGGGAGG
>HPRT1_LsgRNA19
ATTCCTCATGGACTAATTATGGACAGGTAA
>HPRT1_LsgRNA20
CAGTCTGATAAAATCTACAGTCATAGGAAT
>HPRT1_LsgRNA21
TTACCTGTCCATAATTAGTCCATGAGGAAT
>HPRT1_LsgRNA22
CTGGCTTATATCCAACACTTCGTGGGGTCC
>HPRT1_LsgRNA23
TTTTCTTCTAGAATGTCTTGATTGTGGAAG
>HPRT1_LsgRNA24
ATACCTTGCGACCTTGACCATCTTTGGATT
>HPRT1_LsgRNA25
CCCTGAAGTATTCATTATAGTCAAGGGCAT
>HPRT1_LsgRNA26
GGCCGAGCTGCTCACCACGACGCCAGGGCT
>HPRT1_LsgRNA27
TGGAGATGATCTCTCAACTTTAACTGGAAA
>HPRT1_LsgRNA28
TCGAGATGTGATGAAGGAGATGGGAGGCCA
>HPRT1_LsgRNA29
TCTGGCTTATATCCAACACTTCGTGGGGTC
>HPRT1_LsgRNA30
GTCTGGCTTATATCCAACACTTCGTGGGGT

>HPRT1_LsgRNA31
AACAGGGGACATAAAAGTAATTGGTGGAGA
>HPRT1_LsgRNA32
CATTGTAGCCCTCTGTGTGCTCAAGGGGGG
>HPRT1_LsgRNA33
TTCAGTGCTTTGATGTAATCCAGCAGGTCA
>HPRT1_LsgRNA34
GCATGTTTGTGTCATTAGTGAAACTGGAAA
>HPRT1_LsgRNA35
GCTATAAATTCTTTGCTGACCTGCTGGATT
>HPRT1_LsgRNA36
TACCTAATCATTATGCTGAGGATTTGGAAA
>HPRT1_LsgRNA37
ATTGTAGCCCTCTGTGTGCTCAAGGGGGGC
>HPRT1_LsgRNA38
TGATTAGGTATGCAAAATAAATCAAGGTCA
>HPRT1_LsgRNA39
GGCATATCCTACAACAAACTTGTCTGGAAT
>HPRT1_LsgRNA40
TGTTTATTCCTCATGGACTAATTATGGACA
>HPRT1_LsgRNA41
CTGCTCACCACGACGCCAGGGCTGCGGGTC
>HPRT1_LsgRNA42
ATGATCTCTCAACTTTAACTGGAAAGGTAT
>HPRT1_LsgRNA43
AACGTCTTGCTCGAGATGTGATGAAGGAGA
>HPRT1_LsgRNA44
TTTTTGAAAGGATATAATTGACACTGGCAA
>HPRT1_LsgRNA45
TCCCTGAAGTATTCATTATAGTCAAGGGCA
>HPRT1_LsgRNA46
CCCTTGACTATAATGAATACTTCAGGGATT
>HPRT1_LsgRNA47
TCTTTGGATTATACTGCCTGACCAAGGAAA
>HPRT1_LsgRNA48
ACATTGTAGCCCTCTGTGTGCTCAAGGGGG
>HPRT1_LsgRNA49
GTAATTAACAGCTTGCTGGTGAAAAGGACC
>HPRT1_LsgRNA50
ATCATTATGCTGAGGATTTGGAAAGGGTGT
>HPRT1_LsgRNA51
GCCCTTGACTATAATGAATACTTCAGGGAT

(26) $\mathbb{S}_9^-$: 123 low on-target activity sgRNAs targeting CUL3

>CUL3_LsgRNA1
GATGAAAAATATGTAAACAGCATTTGGGAC
>CUL3_LsgRNA2
CGTCAAAACTGGAAGGAATGTTTAGGGATA
>CUL3_LsgRNA3
ATGAAAAATATGTAAACAGCATTTGGGACC
>CUL3_LsgRNA4
AAAAAAACATGATATCTAAGTTAAAGGTAA
>CUL3_LsgRNA5
CTCAAAAGCATGTCTTGGTGCTGGTGGGAT
>CUL3_LsgRNA6
AGGTAAAGCTCTTGTTTCTGAAGAAGGAGA
>CUL3_LsgRNA7
CCGGAAAGGCCCGGATCCGCATCTTGGTGT
>CUL3_LsgRNA8
ACCCAAATCAAAGGAAATAGAAAATGGTCA
>CUL3_LsgRNA9
TAGAAACAATATTGGATAAAGCAATGGTCC
>CUL3_LsgRNA10
AATCAACGGAAGAACCAATTGTAAAGGTGG
>CUL3_LsgRNA11
TGATAAGCTGAAAAAGGGAGTCAAAGGGGT
>CUL3_LsgRNA12
TCTGAATATCTCAAAAGCATGTCTTGGTGC
>CUL3_LsgRNA13
TTTGAATCTTGACTCTGTGTAGTTTGGATG
>CUL3_LsgRNA14
AACCAATTGTAAAGGTGGTTGAAAGGGAAC
>CUL3_LsgRNA15
CAGAACAAGAAGTAGAAACAATATTGGATA
>CUL3_LsgRNA16
GAGCACCATGTCGAATCTGAGCAAAGGCAC
>CUL3_LsgRNA17
TCCGACCCAGAGAGGAAAGAAACAAGGCAG
>CUL3_LsgRNA18
TTGAACGTTATTATAAACAACACTTGGCAA
>CUL3_LsgRNA19
AAGGACTTATTGAGAGAGAATATTTGGCAC
>CUL3_LsgRNA20
GAGGAGAGACTCACCGGAAAGGCCCGGATC
>CUL3_LsgRNA21
TTAAAGAGCATTAATATGGTCATCTGGAAA
>CUL3_LsgRNA22
CATGAGATAGAAGCTGCTATAGTGCGGATA

>CUL3_LsgRNA23
CGGAAGGACACCAAGATGCGGATCCGGGCC
>CUL3_LsgRNA24
ATTCAGGCAACATCTACAGGCAACTGGTGT
>CUL3_LsgRNA25
TGTGAGTGTATGAGTTCCTATTTGAGGGAG
>CUL3_LsgRNA26
TATGAGTTCCTATTTGAGGGAGCAAGGTAA
>CUL3_LsgRNA27
ATCAATAAATAATGAGAGGTATTCAGGAGA
>CUL3_LsgRNA28
TTCAATACGTTTCTTAATAACAACTGGACT
>CUL3_LsgRNA29
GACTATAGTAGAAATGGAGAATTCTGGGCT
>CUL3_LsgRNA30
GAGAATATTTGGCACGAACACCTGAGGATC
>CUL3_LsgRNA31
AGAAATCCAGCGTAAGAATAACAGTGGTCT
>CUL3_LsgRNA32
GGATATGATTGCAAGAGAGCGGAAAGGAGA
>CUL3_LsgRNA33
GTGGATGTCAGTTCACGTCAAAACTGGAAG
>CUL3_LsgRNA34
CGTTATTATAAACAACACTTGGCAAGGAGA
>CUL3_LsgRNA35
CTCTATTATTAAAGAGCATTAATATGGTCA
>CUL3_LsgRNA36
AGGTATTCAGGAGACCTGGAGTTGAGGTTG
>CUL3_LsgRNA37
ATTTATTGATGATAAGCTGAAAAAGGGAGT
>CUL3_LsgRNA38
ACGTCAAAACTGGAAGGAATGTTTAGGGAT
>CUL3_LsgRNA39
TGAGCAAAGGCACGGGCAGCCGGAAGGACA
>CUL3_LsgRNA40
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(27) $\mathbb{S}_{10}^{-}$: 588 low on-target activity sgRNAs targeting NF1

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GTAATTAATTCTGCTGTACTGCCTTGGGTT
>NF1_LsgRNA547
ATACTTACACAACAGGAAAGACTTTGGGAA
>NF1_LsgRNA548
CATTTTACATCATCATCTGCTGCTTGGTTT
>NF1_LsgRNA549
TTGCTTACCTTGTCATTGAATATACGGAGA
>NF1_LsgRNA550
ACATTTACTGACCTGGGGAATGCTGGGAAG
>NF1_LsgRNA551
TCTTTTACTGTAGCTTTATTCAGTAGGGAG
>NF1_LsgRNA552
GGGCTTATACGAAAGCAAGAAACAAGGCAG
>NF1_LsgRNA553
ATGATTATCTTTAATAGAGTCCAGAGGAAG
>NF1_LsgRNA554
TAGGTTCAAAACTGGTCAAATCAATGGTGA
>NF1_LsgRNA555
TAACTTCAAGCCCCTTTCGATTCTAGGTGG
>NF1_LsgRNA556
ATATTTCAATGGAAAATGTTCCTATGGATA
>NF1_LsgRNA557
ATTCTTCAATTTGTTAAATAGCATTGGATA
>NF1_LsgRNA558
AGCCTTCACAAGACCATTGTTAAGAGGCGA

>NF1_LsgRNA559
CAGTTTCATCAAAACCAGTGCAACAGGTGG
>NF1_LsgRNA560
TGTTTTCATCTTTCAGGACACTAAAGGAGA
>NF1_LsgRNA561
GATGTTCCCATAACCCAGTCTGTCAGGTAT
>NF1_LsgRNA562
AAGATTCGGCCAAAAGATGTCCCTGGGACA
>NF1_LsgRNA563
GTTTTTCTCTAGTCCGCATTGGATTGGTGG
>NF1_LsgRNA564
GGAATTCTGAGGAGGAACTGATGATGGCAT
>NF1_LsgRNA565
CAGTTTCTGCTACTCTCCTCATTTTGGGGG
>NF1_LsgRNA566
CAACTTCTTAGTGTTGGCCTGAGAAGGTTG
>NF1_LsgRNA567
GTGGTTCTTTATTTATAGGCATTTTGGAAC
>NF1_LsgRNA568
TGCCTTGATTGACACGTACCTGCCTGGAAT
>NF1_LsgRNA569
TTCCTTGCAGAATCCAAGAAAACAGGGGCC
>NF1_LsgRNA570
AAGGTTGCCCCATGTCCAGGCTCATGGATT
>NF1_LsgRNA571
GAACTTGCTAGATAATCATACTGAAGGCAG
>NF1_LsgRNA572
GCTCTTGCTGGCCATGGAGGAAGTAGGCAG
>NF1_LsgRNA573
TTCTTTGCTTCTGCACTTGGCTTGCGGATC
>NF1_LsgRNA574
GTGCTTGCTTTACATCGTCTACTCTGGAAC
>NF1_LsgRNA575
CACATTGGCCAGAGCCATCGCTATAGGGAG
>NF1_LsgRNA576
GCCATTGTCTCACCGTATGAAGCAGGGATT
>NF1_LsgRNA577
CGAATTGTGATCACATCCTCTGATTGGCAA
>NF1_LsgRNA578
CTATTTTAAAGAATGTTAACAATATGGTGA
>NF1_LsgRNA579
GAATTTTACATACACTACTAACTCTGGTTA
>NF1_LsgRNA580
CACATTTACTGACCTGGGGAATGCTGGGAA

>NF1_LsgRNA581
CTACTTTAGAACAACATCTTATGTGGGATG
>NF1_LsgRNA582
TTTTTTTCAGCTTCCAATAAAAACAGGACA
>NF1_LsgRNA583
TCATTTTCCTACTTGTTCAGTCCATGGTGG
>NF1_LsgRNA584
CCATTTTCTTCACACCTGTCGTGAAGGAAA
>NF1_LsgRNA585
CTGGTTTCTTCATCAATTCCAGGCAGGTAC
>NF1_LsgRNA586
CGTATTTGAAGTCCCACTTTCTCATGGTTA
>NF1_LsgRNA587
TACCTTTGAGCTAGTTCTGTCCACTGGTCC
>NF1_LsgRNA588
TCATTTTGCCAAGAGATGAAATTTAGGTGA

(28) $\mathbb{S}_{11}^{-}$: 178 low on-target activity sgRNAs targeting NF2

>NF2_LsgRNA1
TCCGAAACATCTCGTACAGTGACAAGGAGG
>NF2_LsgRNA2
CTTCAAAGAAGGCCACTCGGGACTTGGCGC
>NF2_LsgRNA3
CCTCAAAGCTTCGTGTTAATAAGCTGGTAA
>NF2_LsgRNA4
CTGAAAAGGCCCAGATCACCGAGGAGGAGG
>NF2_LsgRNA5
CCAAAAATCCCCGCTTGTGAACACTGGGGT
>NF2_LsgRNA6
TAATAAATCTGTATCAGATGACTCCGGAAA
>NF2_LsgRNA7
GATAAAATTTGGCCAAGAAGTGAAAGGTGA
>NF2_LsgRNA8
TCGAAAGACAGGCTGTCACCAATGAGGTTG
>NF2_LsgRNA9
AGCGAAGAGCCAAGCAGAAGCTCCTGGAGA
>NF2_LsgRNA10
GCCCAAGAGGAATTGCTTCCAAAAAGGGTA
>NF2_LsgRNA11
CAAAAATCCCCGCTTGTGAACACTGGGGTC
>NF2_LsgRNA12
TGGCAATCTCCAGGAGCTTCTGCTTGGCTC
>NF2_LsgRNA13
GCACAATGAGAACTCCGACAGGGGTGGCAG

>NF2_LsgRNA14
TCACACAACATTTATTCTTCTTACAGGTAC
>NF2_LsgRNA15
AAGAACCAGTCACCTTTCACTTCTTGGCCA
>NF2_LsgRNA16
AAGGACCTCTTTGATTTGGTGTGCCGGACT
>NF2_LsgRNA17
CCTCAGAAATCACCAGTGCTTCGTTGGCCA
>NF2_LsgRNA18
CCCAAGAGGAATTGCTTCCAAAAAGGGTAA
>NF2_LsgRNA19
CCAAAGAGGCAGATCAGCTGAAGCAGGACC
>NF2_LsgRNA20
CTGAAGATGGCTGAGGAGTCAGAGAGGAGG
>NF2_LsgRNA21
CTTCAGCATTCTCAGGATAAAATTTGGCCA
>NF2_LsgRNA22
TGAAAGCCCAGGCCAGGGAGGAGAAGGCTA
>NF2_LsgRNA23
AACCAGCTCCTCTTCAGCATTCTCAGGATA
>NF2_LsgRNA24
AGACAGCTGACCTGTTGGCTGAAAAGGCCC
>NF2_LsgRNA25
AGCCAGGAGCACAGAAGCCTCAGGAGGGCA
>NF2_LsgRNA26
ATCGAGGCCTTGAAACTGAAAGAGAGGGAG
>NF2_LsgRNA27
GGAAAGGGAAGGACCTCTTTGATTTGGTGT
>NF2_LsgRNA28
AATGAGGTTGAAGCTTGGTATGTCAGGAGG
>NF2_LsgRNA29
AAGTAGTTCACACCGTACATCTCCAGGTCC
>NF2_LsgRNA30
TGGAAGTTCAGCAGATGAAAGCCCAGGCCA
>NF2_LsgRNA31
TGACATACCAAGCTTCAACCTCATTGGTGA
>NF2_LsgRNA32
CTGTATCAGATGACTCCGGAAATGTGGGAG
>NF2_LsgRNA33
AACCATGATCTATTTATGAGGAGAAGGAAA
>NF2_LsgRNA34
TGGTATGTCAGGAGGCAACGGTGCTGGAAT
>NF2_LsgRNA35
TTTCATTCCACGGGAAGGAGATCTTGGGGG

>NF2_LsgRNA36
AGTAATTCTCTCCTCCCACATTTCCGGAGT
>NF2_LsgRNA37
TCTTATTGGATCCACAGAATAAAAAGGGCA
>NF2_LsgRNA38
GCAGCAAGCACAATACCATTAAAAAGGTAC
>NF2_LsgRNA39
GCATCAAGGCCACAGCGATTCGCACGGAGG
>NF2_LsgRNA40
TACACAATCAAGGACACAGTGGCCTGGCTC
>NF2_LsgRNA41
TCTGCACAATGAGAACTCCGACAGGGGTGG
>NF2_LsgRNA42
AGGGCACAGAGCTGCTGCTTGGAGTGGATG
>NF2_LsgRNA43
AGGACACAGTGGCCTGGCTCAAAATGGACA
>NF2_LsgRNA44
TACGCAGAGCACCGAGGCCGAGCCAGGTGA
>NF2_LsgRNA45
GCCACAGATTCTCCAGCTATGTATCGGGAA
>NF2_LsgRNA46
CAGCCATCTTCAGTGCCAGCACCTCGGCTT
>NF2_LsgRNA47
AGCTCATGCGGGAAGCGATGGCCCCGGCCA
>NF2_LsgRNA48
AGATCATGGTTCCCGATACATAGCTGGAGA
>NF2_LsgRNA49
GCTGCATTTCCTGCTCAGCCTCTGCGGCCT
>NF2_LsgRNA50
CTCCCCACAGGGATGAAGCTGAAATGGAAT
>NF2_LsgRNA51
GCTTCCAGCACCTTCTGCTCCATCAGGCGC
>NF2_LsgRNA52
TTATCCAGTGGTTTAATAGTAAACTGGAAG
>NF2_LsgRNA53
TCTTCCAGTTTACTATTAAACCACTGGATA
>NF2_LsgRNA54
GGCCCCCAGGCTCACCGGGTACGTGGGCTT
>NF2_LsgRNA55
TGGCCCCCAGGCTCACCGGGTACGTGGGCT
>NF2_LsgRNA56
CTGACCCCCAAGATCTCCTTCCCGTGGAAT
>NF2_LsgRNA57
CGCTCCGCCTCGCGTGCTTCCTGCAGGTCC

>NF2_LsgRNA58
CGGGCCTGAGCCCCGCGCCATGGCCGGGGC
>NF2_LsgRNA59
AGCGCCTGATGGAGCAGAAGGTGCTGGAAG
>NF2_LsgRNA60
TTGGCCTGGACGGCGTAAGAAGCCAGGAGC
>NF2_LsgRNA61
TGCTCCTGGCTTCTTACGCCGTCCAGGCCA
>NF2_LsgRNA62
ACTACGACCCCAGTGTTCACAAGCGGGGAT
>NF2_LsgRNA63
TCACCGAGGAGGAGGCAAAACTTCTGGCCC
>NF2_LsgRNA64
CGCACGAGGGATGAGTTGGAGAGGAGGCTG
>NF2_LsgRNA65
AAGCCGAGGTGCTGGCACTGAAGATGGCTG
>NF2_LsgRNA66
GCCTCGCTCGAGAGAAGCAGATGAGGGAGG
>NF2_LsgRNA67
GCAACGGTGCTGGAATTGGGTTCATGGGCT
>NF2_LsgRNA68
GGATCGTCACCATGGACGCCGAGATGGAGT
>NF2_LsgRNA69
CTGGCTCAAAATGGACAAGAAGGTTGGGCT
>NF2_LsgRNA70
CCTGCTCAGCCTCTGCGGCCTTCTGGGCCA
>NF2_LsgRNA71
CTGTCTCCCTCTCTTTCAGTTTCAAGGCCT
>NF2_LsgRNA72
GGGGCTCCGAGAAACCTGGTTCTTTGGACT
>NF2_LsgRNA73
TCTCCTCCTCCGTGCGAATCGCTGTGGCCT
>NF2_LsgRNA74
TTACCTCGCAATTGAACTCCATCTCGGCGT
>NF2_LsgRNA75
TTTGCTCTGCAATTCTGCAGGTACTGGATC
>NF2_LsgRNA76
CGGACTCTGGGGCTCCGAGAAACCTGGTTC
>NF2_LsgRNA77
AGAGCTCTTCAAAGAAGGCCACTCGGGACT
>NF2_LsgRNA78
GGGCCTGAGCCCCGCGCCATGGCCGGGGCC
>NF2_LsgRNA79
TCACCTGCTAGAGCTCTTCAAAGAAGGCCA

>NF2_LsgRNA80
TCATCTGCTGAACTTCCAAAGAATCGGCTT
>NF2_LsgRNA81
GCTGCTGCTTGGAGTGGATGCCCTGGGGCT
>NF2_LsgRNA82
TCAGCTGTCTCCTCAGACCGCATCTGGAGG
>NF2_LsgRNA83
CCAGCTTATTAACACGAAGCTTTGAGGAGT
>NF2_LsgRNA84
CCTGCTTCAGCTGATCTGCCTCTTTGGCCC
>NF2_LsgRNA85
TGGCCTTCTTTGAAGAGCTCTAGCAGGTGA
>NF2_LsgRNA86
TGTGCTTGCTGCTGCCACCCCTGTCGGAGT
>NF2_LsgRNA87
GAAGCTTGGTATGTCAGGAGGCAACGGTGC
>NF2_LsgRNA88
CATCCTTTCCTTGCAGGGCCAAAGAGGCAG
>NF2_LsgRNA89
CCTGCTTTCTAGCCTTCTCCTCCCTGGCCT
>NF2_LsgRNA90
AACTGAAAGAGAGGGAGACAGCTCTGGATA
>NF2_LsgRNA91
AATTGAACTCCATCTCGGCGTCCATGGTGA
>NF2_LsgRNA92
AGCTGAAGCTCATGCGGGAAGCGATGGCCC
>NF2_LsgRNA93
CCCAGAAGGCCGCAGAGGCTGAGCAGGAAA
>NF2_LsgRNA94
CTACGACCCCAGTGTTCACAAGCGGGGATT
>NF2_LsgRNA95
TGAGGAGAAGGAAAGCCGATTCTTTGGAAG
>NF2_LsgRNA96
TCTTGAGAGAGCTGAAGCTCATGCGGGAAG
>NF2_LsgRNA97
TCAGGAGGCAACGGTGCTGGAATTGGGTTC
>NF2_LsgRNA98
TGCAGATGAAAGAAGAAGCAACAATGGCCA
>NF2_LsgRNA99
AGCAGATGAAAGCCCAGGCCAGGGAGGAGA
>NF2_LsgRNA100
ATCAGATGACTCCGGAAATGTGGGAGGAGA
>NF2_LsgRNA101
TTCTGCACAATGAGAACTCCGACAGGGGTG

>NF2_LsgRNA102
GAACGCACGAGGGATGAGTTGGAGAGGAGG
>NF2_LsgRNA103
TGGAGCAGAAGGTGCTGGAAGCCGAGGTGC
>NF2_LsgRNA104
CCTTGCAGAGCGCCAAGTCCCGAGTGGCCT
>NF2_LsgRNA105
TTCAGCAGATGAAAGCCCAGGCCAGGGAGG
>NF2_LsgRNA106
TATTGCAGATGAAGTGGAAAGGGAAGGACC
>NF2_LsgRNA107
CTGAGCAGGAAATGCAGCGCATCAAGGCCA
>NF2_LsgRNA108
TTTGGCCAAGAAGTGAAAGGTGACTGGTTC
>NF2_LsgRNA109
CCAGGCTCACCGGGTACGTGGGCTTGGTGG
>NF2_LsgRNA110
TCCTGCTCAGCCTCTGCGGCCTTCTGGGCC
>NF2_LsgRNA111
GATAGCTCAGGACCTGGAGATGTACGGTGT
>NF2_LsgRNA112
TAGAGCTCTTCAAAGAAGGCCACTCGGGAC
>NF2_LsgRNA113
AGCTGCTGCTTGGAGTGGATGCCCTGGGGC
>NF2_LsgRNA114
AGGTGCTGGCACTGAAGATGGCTGAGGAGT
>NF2_LsgRNA115
TACTGCTTGGTACGCAGAGCACCGAGGCCG
>NF2_LsgRNA116
ACATGGAAAAGAGCAAGCATCTGCAGGAGC
>NF2_LsgRNA117
TGCGGGAAGCGATGGCCCCGGCCATGGCGC
>NF2_LsgRNA118
AGCAGGACCTGCAGGAAGCACGCGAGGCGG
>NF2_LsgRNA119
CCAGGGAGGAGAAGGCTAGAAAGCAGGTGA
>NF2_LsgRNA120
GCACGGAGGAGGAGAAGCGCCTGATGGAGC
>NF2_LsgRNA121
GTCAGGAGGCAACGGTGCTGGAATTGGGTT
>NF2_LsgRNA122
AGGAGGCAAAACTTCTGGCCCAGAAGGCCG
>NF2_LsgRNA123
TCAAGGCCACAGCGATTCGCACGGAGGAGG

>NF2_LsgRNA124
AAAAGGCCCAGATCACCGAGGAGGAGGCAA
>NF2_LsgRNA125
AATGGGCCTCACCTGGCTCGGCCTCGGTGC
>NF2_LsgRNA126
TCGAGGCCTTGAAACTGAAAGAGAGGGAGA
>NF2_LsgRNA127
ATGTGGGAGGAGAGAATTACTGCTTGGTAC
>NF2_LsgRNA128
ATGAGGGAGGAGGCTGAACGCACGAGGGAT
>NF2_LsgRNA129
AGAAGGTGCTGGAAGCCGAGGTGCTGGCAC
>NF2_LsgRNA130
CAACGGTGCTGGAATTGGGTTCATGGGCTG
>NF2_LsgRNA131
TTGTGTACTGCAGTCCAAAGAACCAGGTTT
>NF2_LsgRNA132
CAGGGTCATAAATGTGAAGCCCCAGGGCAT
>NF2_LsgRNA133
TGCAGTCCAAAGAACCAGGTTTCTCGGAGC
>NF2_LsgRNA134
TACGGTGTGAACTACTTTGCAATCCGGGTG
>NF2_LsgRNA135
ATTGGTTTGTTATTGCAGATGAAGTGGAAA
>NF2_LsgRNA136
TTTCTAGCCTTCTCCTCCCTGGCCTGGGCT
>NF2_LsgRNA137
TCAGTATCTTTGAAGTCGAAAGACAGGCTG
>NF2_LsgRNA138
TTGTTATTGCAGATGAAGTGGAAAGGGAAG
>NF2_LsgRNA139
GACTTCAAAGATACTGACATGAAGCGGCTT
>NF2_LsgRNA140
CAGATCAGCTGAAGCAGGACCTGCAGGAAG
>NF2_LsgRNA141
TCCCTCATCTGCTTCTCTCGAGCGAGGCGC
>NF2_LsgRNA142
GCCCTCCTGAGGCTTCTGTGCTCCTGGCTT
>NF2_LsgRNA143
TCGCTCGAGAGAAGCAGATGAGGGAGGAGG
>NF2_LsgRNA144
CGCCTCGCTCGAGAGAAGCAGATGAGGGAG
>NF2_LsgRNA145
TGTTTCGGATTTCATTCCACGGGAAGGAGA

>NF2_LsgRNA146
CCACTCGGGACTTGGCGCTCTGCAAGGTGA
>NF2_LsgRNA147
CATCTCGTACAGTGACAAGGAGGTAGGACA
>NF2_LsgRNA148
AACTTCTGGCCCAGAAGGCCGCAGAGGCTG
>NF2_LsgRNA149
TGGCTGAAAAGGCCCAGATCACCGAGGAGG
>NF2_LsgRNA150
AGGCTGAACGCACGAGGGATGAGTTGGAGA
>NF2_LsgRNA151
TCAATGAACTCAAGACAGAAATCGAGGCCT
>NF2_LsgRNA152
ACAATGAATGGGCCTCACCTGGCTCGGCCT
>NF2_LsgRNA153
ATACTGACATGAAGCGGCTTTCCATGGAGA
>NF2_LsgRNA154
ATCCTGAGAATGCTGAAGAGGAGCTGGTTC
>NF2_LsgRNA155
CTCTTGAGAGAGCTGAAGCTCATGCGGGAA
>NF2_LsgRNA156
GGCCTGAGCCCCGCGCCATGGCCGGGGCCA
>NF2_LsgRNA157
CGCATGAGCTTCAGCTCTCTCAAGAGGAAG
>NF2_LsgRNA158
GGTCTGAGGAGACAGCTGACCTGTTGGCTG
>NF2_LsgRNA159
TCTTTGATTTGGTGTGCCGGACTCTGGGGC
>NF2_LsgRNA160
ATTCTGCACAATGAGAACTCCGACAGGGGT
>NF2_LsgRNA161
AGATTGCCACCAAGCCCACGTACCCGGTGA
>NF2_LsgRNA162
ACTGTGCCCTCCAGATGCGGTCTGAGGAGA
>NF2_LsgRNA163
CTCTTGCCGGCAGAGTGGAATACATGGAAA
>NF2_LsgRNA164
AGAATGCTGAAGAGGAGCTGGTTCAGGAGA
>NF2_LsgRNA165
CTGCTGCTTGGAGTGGATGCCCTGGGGCTT
>NF2_LsgRNA166
TACGTGGGCTTGGTGGCAATCTCCAGGAGC
>NF2_LsgRNA167
ACACTGGGGTCGTAGTCACCATACTGGAAA

>NF2_LsgRNA168
TCCTTGTCACTGTACGAGATGTTTCGGATT
>NF2_LsgRNA169
ACGGTGTGAACTACTTTGCAATCCGGGTGT
>NF2_LsgRNA170
TTTGTTATTGCAGATGAAGTGGAAAGGGAA
>NF2_LsgRNA171
TTTCTTCACCCCTCGCAGATGGAGCGGCAG
>NF2_LsgRNA172
TTCATTCCACGGGAAGGAGATCTTGGGGGT
>NF2_LsgRNA173
TTCCTTCTCCTCATAAATAGATCATGGTTC
>NF2_LsgRNA174
TGGCTTCTTACGCCGTCCAGGCCAAGGTAG
>NF2_LsgRNA175
GAGGTTGAAGCTTGGTATGTCAGGAGGCAA
>NF2_LsgRNA176
AGTTTTGCCTCCTCCTCGGTGATCTGGGCC
>NF2_LsgRNA177
CTTATTGGATCCACAGAATAAAAAGGGCAC
>NF2_LsgRNA178
GATCTTGGGGGTCAGTCTGTTCTCAGGGTC

(29) $\mathbb{S}_{12}^{-}$: 191 low on-target activity sgRNAs targeting CD5

>CD5_LsgRNA1
CAGAAAAAAAAACACTGCAACAAGAGGGTA
>CD5_LsgRNA2
TCAGAAAAAGCAGCGTCAGTGGATTGGCCC
>CD5_LsgRNA3
CCAGAAAACAACGGCCCAGGAGGGCGGCCA
>CD5_LsgRNA4
TGGAAAACAGTGTGCAGTTCCAGTTGGAGG
>CD5_LsgRNA5
TGGTAACACTGAGACAGCTTCTCCTGGGCA
>CD5_LsgRNA6
CCCAAACCCAGCGGGCCTGGCCCCAGGCAC
>CD5_LsgRNA7
AAACAACGGCCCAGGAGGGCGGCCAGGCGC
>CD5_LsgRNA8
GGCCAAGGACAGGCCCCTGGGCCTGGGGAA
>CD5_LsgRNA9
CTACAAGGCCAAGGACAGGCCCCTGGGCCT
>CD5_LsgRNA10
GCCCAAGGTTCAGAGCCGCCTGGTCGGGGG

>CD5_LsgRNA11
GCTGAAGTGCGCCAGAGATCACAGTGGGAG
>CD5_LsgRNA12
TCACACACACTGCTGCCCCCGACCAGGCGG
>CD5_LsgRNA13
GGTAACACTGAGACAGCTTCTCCTGGGCAC
>CD5_LsgRNA14
TGAGACAGCTTCTCCTGGGCACAGAGGAAC
>CD5_LsgRNA15
TGTGACAGTTCTGCAGCCAGGGGCCGGGGA
>CD5_LsgRNA16
TGCCACATACCTGCTGGGAACGCTGGGTGA
>CD5_LsgRNA17
CCACACATGGCCAGCAGCACCACCAGGAGT
>CD5_LsgRNA18
ACCCACCACCGTGCCGGAGCCCACAGGTAA
>CD5_LsgRNA19
GGACACCAGCTCCTGCAGAGCTGAGGGACC
>CD5_LsgRNA20
CCCGACCAGGCGGCTCTGAACCTTGGGCTG
>CD5_LsgRNA21
GAGCACCCTCTTACCTGTGGGCTCCGGCAC
>CD5_LsgRNA22
TCTTACCTGTGGGCTCCGGCACGGTGGTGG
>CD5_LsgRNA23
GGGGACGGTGGGAAGAGCTATGTCGGGAGC
>CD5_LsgRNA24
AGAGACTCACCCAGCGTTCCCAGCAGGTAT
>CD5_LsgRNA25
ACTTACTGTTCTGGTTCACTCCTGTGGGGC
>CD5_LsgRNA26
TACAAGAAGCTGGTGAAGAAATGTAGGTAC
>CD5_LsgRNA27
GCCAAGACCCAAACCCAGCGGGCCTGGCCC
>CD5_LsgRNA28
TTACAGATGAGGTTCCCCAGGCCCAGGGGC
>CD5_LsgRNA29
CCAGAGCAGATGACGGTGAGCGCCTGGCCG
>CD5_LsgRNA30
CTGCAGCCAGGGGCCGGGGACGGTGGGAAG
>CD5_LsgRNA31
CTCCAGCTCCTCCCAGATTGCAGCTGGTGC
>CD5_LsgRNA32
CACCAGCTGCAATCTGGGAGGAGCTGGAGA

>CD5_LsgRNA33
GCCAAGGACAGGCCCCTGGGCCTGGGGAAC
>CD5_LsgRNA34
ACGAAGGCCTGAGGTGCACAGGTGTGGTGG
>CD5_LsgRNA35
ATGAAGGGAAAGGACCAAGGGCCAAGGGGT
>CD5_LsgRNA36
CCCAAGGTTCAGAGCCGCCTGGTCGGGGGC
>CD5_LsgRNA37
CTGAAGTGCGCCAGAGATCACAGTGGGAGG
>CD5_LsgRNA38
TGACAGTTCTGCAGCCAGGGGCCGGGGACG
>CD5_LsgRNA39
CGACATAGCTCTTCCCACCGTCCCCGGCCC
>CD5_LsgRNA40
CATTATCACCCACCTAGGCAGATCAGGCTC
>CD5_LsgRNA41
TCCCATCGAATTGGCAAGGGCCTGGGGTCC
>CD5_LsgRNA42
CCTCATCTGTAAGTCTCTGCAGTGTGGCTC
>CD5_LsgRNA43
CAGGATGATGCTTGCCACAGTGCCTGGGGC
>CD5_LsgRNA44
GTGGATGCTGACAAAACCTCCCCCGGGTTC
>CD5_LsgRNA45
CTTCATTGAACAGACCCCAGAACCAGGTCT
>CD5_LsgRNA46
AGGCCAAGGACAGGCCCCTGGGCCTGGGGA
>CD5_LsgRNA47
TCTACAAGGCCAAGGACAGGCCCCTGGGCC
>CD5_LsgRNA48
CTGCCACATACCTGCTGGGAACGCTGGGTG
>CD5_LsgRNA49
GGGACACCAGCTCCTGCAGAGCTGAGGGAC
>CD5_LsgRNA50
GTGGCACCATCCTCTACAAGGCCAAGGACA
>CD5_LsgRNA51
CAACCACCCCACCCACCACCGTGCCGGAGC
>CD5_LsgRNA52
TGTGCACCTCAGGCCTTCGTGTCCTGGCAC
>CD5_LsgRNA53
AGGACACGAAGGCCTGAGGTGCACAGGTGT
>CD5_LsgRNA54
CTTCCAGAAAACAACGGCCCAGGAGGGCGG

>CD5_LsgRNA55
ACCCCAGAACCAGGTCTTCTGCCAAGGATC
>CD5_LsgRNA56
CCAGCAGCACTTCGTGGGAGTCCATGGATA
>CD5_LsgRNA57
TCTGCAGCCAGGGGCCGGGGACGGTGGGAA
>CD5_LsgRNA58
ATCTCAGCTGTTTGCACACTGCAGAGGCCT
>CD5_LsgRNA59
AGTCCAGCTTACCAGAGCAGATGACGGTGA
>CD5_LsgRNA60
TCCCCAGGCCCAGGGGCCTGTCCTTGGCCT
>CD5_LsgRNA61
ACCCCAGGCCCTTGCCAATTCGATGGGAGG
>CD5_LsgRNA62
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>CD5_LsgRNA66
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>CD5_LsgRNA67
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>CD5_LsgRNA68
AGCACCACCAGGAGTACAAGGGTCAGGATG
>CD5_LsgRNA69
GCATCCACCGTGTGGAAGGAGATGAGGTCG
>CD5_LsgRNA70
GCTTCCAGAAAACAACGGCCCAGGAGGGCG
>CD5_LsgRNA71
GACCCCAGGCCCTTGCCAATTCGATGGGAG
>CD5_LsgRNA72
CCTCCCATCGAATTGGCAAGGGCCTGGGGT
>CD5_LsgRNA73
AGGACCATTCGAAAAATGCCCAGCAGGCCT
>CD5_LsgRNA74
TCCTCCCAGATTGCAGCTGGTGCCAGGACA
>CD5_LsgRNA75
CCTCCCCCGGGTTCCTCTGTGCCCAGGAGA
>CD5_LsgRNA76
AGGCCCGAGCACCCTCTTACCTGTGGGCTC

>CD5_LsgRNA77
GCGACCTCATCTCCTTCCACACGGTGGATG
>CD5_LsgRNA78
AAGGCCTGAGGTGCACAGGTGTGGTGGAAT
>CD5_LsgRNA79
GTGTCCTGGCACCAGCTGCAATCTGGGAGG
>CD5_LsgRNA80
CGCTCCTGGGAACACTTACTGTTCTGGTTC
>CD5_LsgRNA81
TTCTCCTGGGCACAGAGGAACCCGGGGGAG
>CD5_LsgRNA82
GCTCCGGCACGGTGGTGGGTGGGGTGGTTG
>CD5_LsgRNA83
TGGTCGGGGGCAGCAGTGTGTGTGAGGGCA
>CD5_LsgRNA84
GCAGCGTCAGTGGATTGGCCCCACAGGAGT
>CD5_LsgRNA85
AGAGCTATGTCGGGAGCAGCAGTGTGGCGA
>CD5_LsgRNA86
GGATCTCCACTTGACCCTGACACTTGGAAT
>CD5_LsgRNA87
TGGGCTCCGGCACGGTGGTGGGTGGGGTGG
>CD5_LsgRNA88
GCTTCTCCTGGGCACAGAGGAACCCGGGGG
>CD5_LsgRNA89
CTGCCTCGGACAGTCTGGAAGGGGTGGCCT
>CD5_LsgRNA90
GCTCCTGCAGAGCTGAGGGACCCCAGGCCC
>CD5_LsgRNA91
AGTTCTGCAGCCAGGGGCCGGGGACGGTGG
>CD5_LsgRNA92
CTTTCTGCCTCGGACAGTCTGGAAGGGGTG
>CD5_LsgRNA93
GGGCCTGGGGTCCCTCAGCTCTGCAGGAGC
>CD5_LsgRNA94
ACATCTGTCCGGGACAGAGGCAGCAGGGAC
>CD5_LsgRNA95
CTTACTGTTCTGGTTCACTCCTGTGGGGCC
>CD5_LsgRNA96
CCCTCTTACCTGTGGGCTCCGGCACGGTGG
>CD5_LsgRNA97
AGTGCTTCCAGAAAACAACGGCCCAGGAGG
>CD5_LsgRNA98
GATCCTTGGCAGAAGACCTGGTTCTGGGGT

>CD5_LsgRNA99
GGCTCTTTCTTGACACATCTGTCCGGGACA
>CD5_LsgRNA100
CATCGAAGCCACACAGCAACTGTGCGGTCC
>CD5_LsgRNA101
GGTGGAATTCTACAATGGCAGCTGGGGTGG
>CD5_LsgRNA102
TCTTGACACATCTGTCCGGGACAGAGGCAG
>CD5_LsgRNA103
CCCCGACCAGGCGGCTCTGAACCTTGGGCT
>CD5_LsgRNA104
CGGGGACGGTGGGAAGAGCTATGTCGGGAG
>CD5_LsgRNA105
CGGTGAGCGCCTGGCCGCCCTCCTGGGCCG
>CD5_LsgRNA106
TACAGATGAGGTTCCCCAGGCCCAGGGGCC
>CD5_LsgRNA107
GGTGGATGCTGACAAAACCTCCCCCGGGTT
>CD5_LsgRNA108
GGATGATGCTTGCCACAGTGCCTGGGGCCA
>CD5_LsgRNA109
GCCAGCAGCACCACCAGGAGTACAAGGGTC
>CD5_LsgRNA110
CCAGGCCCTTGCCAATTCGATGGGAGGCCC
>CD5_LsgRNA111
CGGGGCCTCCCATCGAATTGGCAAGGGCCT
>CD5_LsgRNA112
AGGGGCCTGTCCTTGGCCTTGTAGAGGATG
>CD5_LsgRNA113
AAGTGCGCCAGAGATCACAGTGGGAGGCCC
>CD5_LsgRNA114
CCAGGCGCTCACCGTCATCTGCTCTGGTAA
>CD5_LsgRNA115
GTGGGCTCCGGCACGGTGGTGGGTGGGGTG
>CD5_LsgRNA116
TGCTGCTGGCCATGTGTGGTCCTCTGGTCT
>CD5_LsgRNA117
GCCCGCTGGGTTTGGGTCTTGGCCTGGATA
>CD5_LsgRNA118
AGCGGCTTTCTGCCTCGGACAGTCTGGAAG
>CD5_LsgRNA119
TGGTGGAATTCTACAATGGCAGCTGGGGTG
>CD5_LsgRNA120
CCATGGACTCCCACGAAGTGCTGCTGGCTG

>CD5_LsgRNA121
CCTGGGCACAGAGGAACCCGGGGGAGGTTT
>CD5_LsgRNA122
ATGTGGCAGCCAGCAGCACTTCGTGGGAGT
>CD5_LsgRNA123
TCCAGGCCAAGACCCAAACCCAGCGGGCCT
>CD5_LsgRNA124
GCCAGGCCCGCTGGGTTTGGGTCTTGGCCT
>CD5_LsgRNA125
TCGGGGCCTCCCATCGAATTGGCAAGGGCC
>CD5_LsgRNA126
ACCAGGCGGCTCTGAACCTTGGGCTGGAAA
>CD5_LsgRNA127
TGTGGGCTCCGGCACGGTGGTGGGTGGGGT
>CD5_LsgRNA128
CCCTGGCTGCAGAACTGTCACACAGGGCCT
>CD5_LsgRNA129
ACTTGGGACCGCACAGTTGCTGTGTGGCTT
>CD5_LsgRNA130
CCTGGGGCCAGGCCCGCTGGGTTTGGGTCT
>CD5_LsgRNA131
CACAGGGCCTCCCACTGTGATCTCTGGCGC
>CD5_LsgRNA132
GCCTGGGGCCAGGCCCGCTGGGTTTGGGTC
>CD5_LsgRNA133
GGTCGGGGGCAGCAGTGTGTGTGAGGGCAT
>CD5_LsgRNA134
TTGTGGGTGGAGGTGTCGTTCTCTGGGGCT
>CD5_LsgRNA135
GCTGGGGTGGCACCATCCTCTACAAGGCCA
>CD5_LsgRNA136
TGTGGGTGGAGGTGTCGTTCTCTGGGGCTC
>CD5_LsgRNA137
GCACGGTGGTGGGTGGGGTGGTTGTGGGTG
>CD5_LsgRNA138
CCAAGGTTCAGAGCCGCCTGGTCGGGGGCA
>CD5_LsgRNA139
GTTCGTCAGAAAAAGCAGCGTCAGTGGATT
>CD5_LsgRNA140
TTTTGTCAGCATCCACCGTGTGGAAGGAGA
>CD5_LsgRNA141
AATGGTCCTGGCTCAGCCTCCAACTGGAAC
>CD5_LsgRNA142
TGTAGTGAGACACAGCTCCCGTTCGGGGCC

>CD5_LsgRNA143
CACAGTGCCTGGGGCCAGGCCCGCTGGGTT
>CD5_LsgRNA144
ACCTGTGGGCTCCGGCACGGTGGTGGGTGG
>CD5_LsgRNA145
GGTGGTGGGTGGGGTGGTTGTGGGTGGAGG
>CD5_LsgRNA146
CCTGGTGGTGCTGCTGGCCATGTGTGGTCC
>CD5_LsgRNA147
CACGGTGGTGGGTGGGGTGGTTGTGGGTGG
>CD5_LsgRNA148
CCCTGTGTGACAGTTCTGCAGCCAGGGGCC
>CD5_LsgRNA149
CAAGGTTCAGAGCCGCCTGGTCGGGGGCAG
>CD5_LsgRNA150
CTGTTCAATGAAGGGAAAGGACCAAGGGCC
>CD5_LsgRNA151
CTTTTCCACAGCGGCTTTCTGCCTCGGACA
>CD5_LsgRNA152
GGGGTCCCTCAGCTCTGCAGGAGCTGGTGT
>CD5_LsgRNA153
ACCATCCTCTACAAGGCCAAGGACAGGCCC
>CD5_LsgRNA154
GTGGTCCTCTGGTCTACAAGAAGCTGGTGA
>CD5_LsgRNA155
CGTGTCCTGGCACCAGCTGCAATCTGGGAG
>CD5_LsgRNA156
CTTCTCCTGGGCACAGAGGAACCCGGGGGA
>CD5_LsgRNA157
GCTTTCTGCCTCGGACAGTCTGGAAGGGGT
>CD5_LsgRNA158
TGGCTCTTTCTTGACACATCTGTCCGGGAC
>CD5_LsgRNA159
CTTGTGAACTTGTGTTGTTGCAGTTGGATA
>CD5_LsgRNA160
GTAGTGAGACACAGCTCCCGTTCGGGGCCT
>CD5_LsgRNA161
ACGGTGAGCGCCTGGCCGCCCTCCTGGGCC
>CD5_LsgRNA162
AGGATGATGCTTGCCACAGTGCCTGGGGCC
>CD5_LsgRNA163
TGTTTGCACACTGCAGAGGCCTGCTGGGCA
>CD5_LsgRNA164
CTGGTGCCAGGACACGAAGGCCTGAGGTGC

>CD5_LsgRNA165
TTTCTGCCTCGGACAGTCTGGAAGGGGTGG
>CD5_LsgRNA166
ACAGTGCCTGGGGCCAGGCCCGCTGGGTTT
>CD5_LsgRNA167
GTGGTGGAATTCTACAATGGCAGCTGGGGT
>CD5_LsgRNA168
GAATTGGAGCCACTTAGCATCACCTGGATA
>CD5_LsgRNA169
TCCTTGGCAGAAGACCTGGTTCTGGGGTCT
>CD5_LsgRNA170
TAAGTGGCTCCAATTCCAAGTGTCAGGGTC
>CD5_LsgRNA171
CCCCTGGCTGCAGAACTGTCACACAGGGCC
>CD5_LsgRNA172
GTTGTGGGTGGAGGTGTCGTTCTCTGGGGC
>CD5_LsgRNA173
CCCTTGTACTCCTGGTGGTGCTGCTGGCCA
>CD5_LsgRNA174
CTGGTGTCCCTGCTGCCTCTGTCCCGGACA
>CD5_LsgRNA175
CATCTGTCCGGGACAGAGGCAGCAGGGACA
>CD5_LsgRNA176
CCTGTGTGACAGTTCTGCAGCCAGGGGCCG
>CD5_LsgRNA177
TACCTGTGGGCTCCGGCACGGTGGTGGGTG
>CD5_LsgRNA178
GAGATGTGGTGACCCCTTGGCCCTTGGTCC
>CD5_LsgRNA179
GCCCTGTGTGACAGTTCTGCAGCCAGGGGC
>CD5_LsgRNA180
TTACTGTTCTGGTTCACTCCTGTGGGGCCA
>CD5_LsgRNA181
CCAATTCCAAGTGTCAGGGTCAAGTGGAGA
>CD5_LsgRNA182
GCAGTTCCAGTTGGAGGCTGAGCCAGGACC
>CD5_LsgRNA183
GCTCTTCCCACCGTCCCCGGCCCCTGGCTG
>CD5_LsgRNA184
CCAATTCGATGGGAGGCCCCGAACGGGAGC
>CD5_LsgRNA185
CCCGTTCGGGGCCTCCCATCGAATTGGCAA
>CD5_LsgRNA186
GGAATTCTACAATGGCAGCTGGGGTGGCAC

>CD5_LsgRNA187
TCCTTTCTGCAGATTTCCAGCCCAAGGTTC
>CD5_LsgRNA188
CTGGTTCTGGGGTCTGTTCAATGAAGGGAA
>CD5_LsgRNA189
CCACTTGACCCTGACACTTGGAATTGGAGC
>CD5_LsgRNA190
ATGCTTGCCACAGTGCCTGGGGCCAGGCCC
>CD5_LsgRNA191
ATCCTTGGCAGAAGACCTGGTTCTGGGGTC

(30) $\mathbb{S}_{13}^{-}$: 59 low on-target activity sgRNAs targeting CD28

>CD28_LsgRNA1
AACGAAACAGTGACGTTCCGTCTCTGGAAT
>CD28_LsgRNA2
TGGTAAAGCAGTCGCCCCTGCTTGTGGTAG
>CD28_LsgRNA3
CTGCAAAGTCTCTGGCAGGGGCGTAGGGCT
>CD28_LsgRNA4
CATGAACATGACTCCCCGGAGGCCTGGGCT
>CD28_LsgRNA5
TGCAAAGTCTCTGGCAGGGGCGTAGGGCTG
>CD28_LsgRNA6
CTCGAATGCCGAGTTCAACTGCGACGGGGA
>CD28_LsgRNA7
ATGAACATGACTCCCCGGAGGCCTGGGCTC
>CD28_LsgRNA8
TACAACCTTCTCGCAAAGGAATTCCGGGCA
>CD28_LsgRNA9
AGCAACGAGGTCAGCCTCAGCTGCAGGTAT
>CD28_LsgRNA10
CGGTACGCTGCAAAGTCTCTGGCAGGGGCG
>CD28_LsgRNA11
AGTGACTACATGAACATGACTCCCCGGAGG
>CD28_LsgRNA12
TTGAACTCGGCATTCGAGCGAAACTGGGGC
>CD28_LsgRNA13
GAACAGCGACGTGGAAGTCTGTGTCGGGAA
>CD28_LsgRNA14
ACTCAGTCATCTCCTAAGCTGTTTTGGGCA
>CD28_LsgRNA15
TGACAGTGGCTCTTTGTGTTATCTGGGTAA
>CD28_LsgRNA16
CTGGATAGGGGTCCCTGTCAGGGGCGGTAC

>CD28_LsgRNA17
CGAAATCCCCGTCGCAGTTGAACTCGGCAT
>CD28_LsgRNA18
TCGAATGCCGAGTTCAACTGCGACGGGGAT
>CD28_LsgRNA19
AGGAATTCCGGGCATCCCTGTACAAGGGCG
>CD28_LsgRNA20
TGTACAAGGGCGTGAACAGCGACGTGGAAG
>CD28_LsgRNA21
GTGACAGTGGCTCTTTGTGTTATCTGGGTA
>CD28_LsgRNA22
GTTCCATTGCTCCTCTCGTTGTCTAGGTAA
>CD28_LsgRNA23
TTCCCCCCCTAGACAAATAGTAGAAGGAAC
>CD28_LsgRNA24
GATGCCCGGAATTCCTTTGCGAGAAGGTTG
>CD28_LsgRNA25
TTTTCCCTTCAGAAAACAAGATTTTGGTAA
>CD28_LsgRNA26
ACAACCTTCTCGCAAAGGAATTCCGGGCAT
>CD28_LsgRNA27
CATTCGAGCGAAACTGGGGCTGATAGGTAA
>CD28_LsgRNA28
CTTTCGAGTGAGCCCAGGCCTCCGGGGAGT
>CD28_LsgRNA29
TTCACGCCCTTGTACAGGGATGCCCGGAAT
>CD28_LsgRNA30
CCTCCGCCTTACCTAGACAACGAGAGGAGC
>CD28_LsgRNA31
GGTACGCTGCAAAGTCTCTGGCAGGGGCGT
>CD28_LsgRNA32
ACGTCGCTGTTCACGCCCTTGTACAGGGAT
>CD28_LsgRNA33
ACCTCGTTGCTATCTACCACAAGCAGGGGC
>CD28_LsgRNA34
GTCACTAGCAAGCCATAACAAAACAGGACT
>CD28_LsgRNA35
ATTGCTCCTCTCGTTGTCTAGGTAAGGCGG
>CD28_LsgRNA36
TGAACTCGGCATTCGAGCGAAACTGGGGCT
>CD28_LsgRNA37
AAGTCTCTGGCAGGGGCGTAGGGCTGGTAA
>CD28_LsgRNA38
CTTTGCAGCGTACCGCCCCTGACAGGGACC

>CD28_LsgRNA39
TCTGGCAGGGGCGTAGGGCTGGTAAGGCTT
>CD28_LsgRNA40
AACAGCGACGTGGAAGTCTGTGTCGGGAAT
>CD28_LsgRNA41
AGGGGCGGTACGCTGCAAAGTCTCTGGCAG
>CD28_LsgRNA42
CGTCGCTGTTCACGCCCTTGTACAGGGATG
>CD28_LsgRNA43
CAATGGAACTATTATTCACATAAAAGGTAA
>CD28_LsgRNA44
CGACGTGGAAGTCTGTGTCGGGAATGGGAA
>CD28_LsgRNA45
GTCTGTTCCTTCTACTATTTGTCTAGGGGG
>CD28_LsgRNA46
CTGGTAAGGCTTTCGAGTGAGCCCAGGCCT
>CD28_LsgRNA47
GCGGTACGCTGCAAAGTCTCTGGCAGGGGC
>CD28_LsgRNA48
GCTTTCGAGTGAGCCCAGGCCTCCGGGGAG
>CD28_LsgRNA49
CCTCTCGTTGTCTAGGTAAGGCGGAGGGTA
>CD28_LsgRNA50
ACTTTGCAGCGTACCGCCCCTGACAGGGAC
>CD28_LsgRNA51
CGAATGCCGAGTTCAACTGCGACGGGGATT
>CD28_LsgRNA52
GACGTGGAAGTCTGTGTCGGGAATGGGAAT
>CD28_LsgRNA53
CTTCTGGATAGGGGTCCCTGTCAGGGGCGG
>CD28_LsgRNA54
GTTTTGGGCACTGGTCGTGGTTGCTGGAGT
>CD28_LsgRNA55
GTCATGTTCATGTAGTCACTTTGAAGGAGT
>CD28_LsgRNA56
TTTGTTATGGCTTGCTAGTGACAGTGGCTC
>CD28_LsgRNA57
GGTATTCCTACAACCTTCTCGCAAAGGAAT
>CD28_LsgRNA58
GGAATTCCTTTGCGAGAAGGTTGTAGGAAT
>CD28_LsgRNA59
GGCTTTCGAGTGAGCCCAGGCCTCCGGGGA

(31) $\mathbb{S}_{14}^{-}$: 135 low on-target activity sgRNAs targeting H2-K

>H2-K_LsgRNA1
CACCAAACACAAGTGGGAGCAGGCTGGTGA
>H2-K_LsgRNA2
CCAGAACAGCAACGGTCGCCATGTTGGAGA
>H2-K_LsgRNA3
CGCCAACAGCAGGAGCAGCGTGCACGGTAC
>H2-K_LsgRNA4
CGGGAACGCGACGCTGCTGCGCACAGGTGC
>H2-K_LsgRNA5
TGAAAACGTGGACGGCGGCGGACATGGCGG
>H2-K_LsgRNA6
GATGAAGATGAGAAGGAGAAACACAGGTAG
>H2-K_LsgRNA7
CTCCAAGGACAACCAGAACAGCAACGGTCG
>H2-K_LsgRNA8
CTGCAATAGTCACTGGAGCTGTGGTGGCTT
>H2-K_LsgRNA9
GGAGACAGTGGATGGAGGAGGCTCTGGGAA
>H2-K_LsgRNA10
TTACACATGCCATGTGTACCATCAGGGGCT
>H2-K_LsgRNA11
CAGGACATGGAGCTTGTGGAGACCAGGCCT
>H2-K_LsgRNA12
CATCACCCTGACCTGGCAGTTGAATGGGGA
>H2-K_LsgRNA13
AGTCACCCTGAGGTGCTGGGCCCTGGGCTT
>H2-K_LsgRNA14
AAATACCTCAGCGAGTGTGGGCCTGGGGGC
>H2-K_LsgRNA15
GGTGACGAAATACCTCAGCGAGTGTGGGCC
>H2-K_LsgRNA16
AGCCACTCCACGCACGTGCCCTCCAGGTAG
>H2-K_LsgRNA17
ACGAAGACCTGAAAACGTGGACGGCGGCGG
>H2-K_LsgRNA18
AGAGAGACTCAGGGCCTACCTGGAGGGCAC
>H2-K_LsgRNA19
GAGCAGAGTTTCCGAGTGGACCTGAGGACC
>H2-K_LsgRNA20
ATGGAGCAGGAGGGGCCCGAGTATTGGGAG
>H2-K_LsgRNA21
TAGAAGCCCAGGGCCCAGCACCTCAGGGTG
>H2-K_LsgRNA22
TCGCAGCCGTCGTAGGCGTACTGCTGGTAC

>H2-K_LsgRNA23
TGCCAGGTCAGGGTGATGTCAGCAGGGTAG
>H2-K_LsgRNA24
TTGTAGTAGCCGAGCAGGGTCCTCAGGTCC
>H2-K_LsgRNA25
TGGAAGTCGGCTACGTGGACGACACGGAGT
>H2-K_LsgRNA26
GAAGATAAAGTCACCCTGAGGTGCTGGGCC
>H2-K_LsgRNA27
CTTTATCTTCAGGTCTGCTGTGATGGGTCA
>H2-K_LsgRNA28
TGTGATGGGTCACATGGGCCTTTGGGGAAT
>H2-K_LsgRNA29
CGCCATGTTGGAGACAGTGGATGGAGGAGG
>H2-K_LsgRNA30
AGGTATTTCGTCACCGCCGTGTCCCGGCCC
>H2-K_LsgRNA31
CTCTCACACTATTCAGGTGATCTCTGGCTG
>H2-K_LsgRNA32
ATTACACATGCCATGTGTACCATCAGGGGC
>H2-K_LsgRNA33
AAGTCACCCTGAGGTGCTGGGCCCTGGGCT
>H2-K_LsgRNA34
ACTCCACGCACGTGCCCTCCAGGTAGGCCC
>H2-K_LsgRNA35
CGTGCACGCTGCTCCTGCTGTTGGCGGCCG
>H2-K_LsgRNA36
CCCACACTCTCCTTACCCCATCTCAGGGTG
>H2-K_LsgRNA37
CTGCCAGGTCAGGGTGATGTCAGCAGGGTA
>H2-K_LsgRNA38
GCTCCAGTGACTATTGCAGCTCCAAGGACA
>H2-K_LsgRNA39
GAGACAGTGGATGGAGGAGGCTCTGGGAAG
>H2-K_LsgRNA40
ACCCCATCTCAGGGTGAGGGGCTCAGGCAG
>H2-K_LsgRNA41
TGGGCATCTGTGGTGGTGCCTCTTGGGAAG
>H2-K_LsgRNA42
TACACATGCCATGTGTACCATCAGGGGCTG
>H2-K_LsgRNA43
CCAACATGGCGACCGTTGCTGTTCTGGTTG
>H2-K_LsgRNA44
GGCACCACCACAGATGCCCACTTCTGGAAG

>H2-K_LsgRNA45
CCTTCCAGAAGTGGGCATCTGTGGTGGTGC
>H2-K_LsgRNA46
GGAGCCAGGGCGGCCGCCAACAGCAGGAGC
>H2-K_LsgRNA47
CCTCCCCATTCAACTGCCAGGTCAGGGTGA
>H2-K_LsgRNA48
CCGCCCCCAGGCCCACACTCGCTGAGGTAT
>H2-K_LsgRNA49
TCCTCCCCATTCAACTGCCAGGTCAGGGTG
>H2-K_LsgRNA50
GCTCCCCGAGGCCGGGCCGGGACACGGCGG
>H2-K_LsgRNA51
GGTACCCGCGGAGGAGTCGCCCGTCGGACC
>H2-K_LsgRNA52
ATCACCCTGACCTGGCAGTTGAATGGGGAG
>H2-K_LsgRNA53
GGGTCCGACGGGCGACTCCTCCGCGGGTAC
>H2-K_LsgRNA54
ACCGCCGTGTCCCGGCCCGGCCTCGGGGAG
>H2-K_LsgRNA55
CCGGCCTCGGGGAGCCCCGGTACATGGAAG
>H2-K_LsgRNA56
AAGACCTGAAAACGTGGACGGCGGCGGACA
>H2-K_LsgRNA57
TCACCCTGACCTGGCAGTTGAATGGGGAGG
>H2-K_LsgRNA58
TGCTCCTGCTGTTGGCGGCCGCCCTGGCTC
>H2-K_LsgRNA59
CTCTCCTTACCCCATCTCAGGGTGAGGGGC
>H2-K_LsgRNA60
AATCCGAGATATGAGCCGCGGGCGCGGTGG
>H2-K_LsgRNA61
GTCCCGCAGGCTCTCACACTATTCAGGTGA
>H2-K_LsgRNA62
CCACCGCGCCCGCGGCTCATATCTCGGATT
>H2-K_LsgRNA63
CCCGCGCGGGTCTGAGTCGGAGCCAGGGCG
>H2-K_LsgRNA64
CGGGCGCGGTGGATGGAGCAGGAGGGGCCC
>H2-K_LsgRNA65
TGCTCGGCTACTACAACCAGAGCAAGGGCG
>H2-K_LsgRNA66
GGAGCGGGAGACACAGAAAGCCAAGGGCAA

>H2-K_LsgRNA67
AGTTCGTGCGCTTCGACAGCGACGCGGAGA
>H2-K_LsgRNA68
CCGCCGTGTCCCGGCCCGGCCTCGGGGAGC
>H2-K_LsgRNA69
GGGCCTACCTGGAGGGCACGTGCGTGGAGT
>H2-K_LsgRNA70
GCACCTCAGGGTGACTTTATCTTCAGGTCT
>H2-K_LsgRNA71
GTGGCTCCGCAGATACCTGAAGAACGGGAA
>H2-K_LsgRNA72
TCAGCTCCTCCCCATTCAACTGCCAGGTCA
>H2-K_LsgRNA73
CTGCCTGAGCCCCTCACCCTGAGATGGGGT
>H2-K_LsgRNA74
CAGGCTGGTGAAGCAGAGAGACTCAGGGCC
>H2-K_LsgRNA75
TCTCCTTACCCCATCTCAGGGTGAGGGGCT
>H2-K_LsgRNA76
GAACCTTCCAGAAGTGGGCATCTGTGGTGG
>H2-K_LsgRNA77
TGTCCTTGGAGCTGCAATAGTCACTGGAGC
>H2-K_LsgRNA78
GGAGCTTGTGGAGACCAGGCCTGCAGGGGA
>H2-K_LsgRNA79
CGGAGAATCCGAGATATGAGCCGCGGGCGC
>H2-K_LsgRNA80
AGTTGAATGGGGAGGAGCTGATCCAGGACA
>H2-K_LsgRNA81
TGTGGAGACCAGGCCTGCAGGGGATGGAAC
>H2-K_LsgRNA82
CGGGGAGCCCCGGTACATGGAAGTCGGCTA
>H2-K_LsgRNA83
GCCTGAGCCCCTCACCCTGAGATGGGGTAA
>H2-K_LsgRNA84
AGCTGATCCAGGACATGGAGCTTGTGGAGA
>H2-K_LsgRNA85
CTGTGATGGGTCACATGGGCCTTTGGGGAA
>H2-K_LsgRNA86
GGGCGATGTAATCGCAGCCGTCGTAGGCGT
>H2-K_LsgRNA87
TCAGGCAGCCCCTGATGGTACACATGGCAT
>H2-K_LsgRNA88
TGGAGCAGGAGGGGCCCGAGTATTGGGAGC

>H2-K_LsgRNA89
GTGGGCATCTGTGGTGGTGCCTCTTGGGAA
>H2-K_LsgRNA90
GGTCGCCATGTTGGAGACAGTGGATGGAGG
>H2-K_LsgRNA91
AGAAGCCCAGGGCCCAGCACCTCAGGGTGA
>H2-K_LsgRNA92
CACCGCCGTGTCCCGGCCCGGCCTCGGGGA
>H2-K_LsgRNA93
AGCAGCGTCGCGTTCCCGTTCTTCAGGTAT
>H2-K_LsgRNA94
CCTGGCTCCGACTCAGACCCGCGCGGGTGA
>H2-K_LsgRNA95
TCCCGGCCCGGTACTCACCCGCGCGGGTCT
>H2-K_LsgRNA96
GCTCGGCTACTACAACCAGAGCAAGGGCGG
>H2-K_LsgRNA97
CTCTGGCTGTGAAGTGGGGTCCGACGGGCG
>H2-K_LsgRNA98
ACCGGGGCTCCCCGAGGCCGGGCCGGGACA
>H2-K_LsgRNA99
GTGAGGGGCTCAGGCAGCCCCTGATGGTAC
>H2-K_LsgRNA100
CAACGGTCGCCATGTTGGAGACAGTGGATG
>H2-K_LsgRNA101
TTCAGGTGATCTCTGGCTGTGAAGTGGGGT
>H2-K_LsgRNA102
GGAAGGTTCCATCCCCTGCAGGCCTGGTCT
>H2-K_LsgRNA103
CCATGTACCGGGGCTCCCCGAGGCCGGGCC
>H2-K_LsgRNA104
TTTCGTCACCGCCGTGTCCCGGCCCGGCCT
>H2-K_LsgRNA105
TGATGTCAGCAGGGTAGAAGCCCAGGGCCC
>H2-K_LsgRNA106
TCAGGTCTGCTGTGATGGGTCACATGGGCC
>H2-K_LsgRNA107
TCAGGTGATCTCTGGCTGTGAAGTGGGGTC
>H2-K_LsgRNA108
TACCGTGCACGCTGCTCCTGCTGTTGGCGG
>H2-K_LsgRNA109
CCGAGTGGACCTGAGGACCCTGCTCGGCTA
>H2-K_LsgRNA110
AAACGTGGACGGCGGCGGACATGGCGGCGC

>H2-K_LsgRNA111
GACCGTTGCTGTTCTGGTTGTCCTTGGAGC
>H2-K_LsgRNA112
AAGATAAAGTCACCCTGAGGTGCTGGGCCC
>H2-K_LsgRNA113
CATGTACCGGGGCTCCCCGAGGCCGGGCCG
>H2-K_LsgRNA114
GAAATACCTCAGCGAGTGTGGGCCTGGGGG
>H2-K_LsgRNA115
ACTTTATCTTCAGGTCTGCTGTGATGGGTC
>H2-K_LsgRNA116
GTACTCACCCGCGCGGGTCTGAGTCGGAGC
>H2-K_LsgRNA117
CTCCTCCATCCACTGTCTCCAACATGGCGA
>H2-K_LsgRNA118
GCGTTCCCGTTCTTCAGGTATCTGCGGAGC
>H2-K_LsgRNA119
GGGGTCCGACGGGCGACTCCTCCGCGGGTA
>H2-K_LsgRNA120
TGGCTCCGCAGATACCTGAAGAACGGGAAC
>H2-K_LsgRNA121
CTGGTCTCCACAAGCTCCATGTCCTGGATC
>H2-K_LsgRNA122
TTGCTCTGGTTGTAGTAGCCGAGCAGGGTC
>H2-K_LsgRNA123
GCCCTGAACGAAGACCTGAAAACGTGGACG
>H2-K_LsgRNA124
TGCCTGAGCCCCTCACCCTGAGATGGGGTA
>H2-K_LsgRNA125
GATATGAGCCGCGGGCGCGGTGGATGGAGC
>H2-K_LsgRNA126
CAGGTGATCTCTGGCTGTGAAGTGGGGTCC
>H2-K_LsgRNA127
GCTGTGATGGGTCACATGGGCCTTTGGGGA
>H2-K_LsgRNA128
GAGCTGCAATAGTCACTGGAGCTGTGGTGG
>H2-K_LsgRNA129
CTCCTGCTCCATCCACCGCGCCCGCGGCTC
>H2-K_LsgRNA130
CTTCTGGAAGGTTCCATCCCCTGCAGGCCT
>H2-K_LsgRNA131
TACCTGGAGGGCACGTGCGTGGAGTGGCTC
>H2-K_LsgRNA132
CATCTGTGGTGGTGCCTCTTGGGAAGGAGC

>H2-K_LsgRNA133
CTCCTTACCCCATCTCAGGGTGAGGGGCTC
>H2-K_LsgRNA134
CATGTTGGAGACAGTGGATGGAGGAGGCTC
>H2-K_LsgRNA135
GAGCTTGTGGAGACCAGGCCTGCAGGGGAT

(32) $\mathbb{S}_{15}^{-}$: 210 low on-target activity sgRNAs targeting CD45

>CD45_LsgRNA1
ATACAAAAGGAAGATTGCTGATGAGGGCAG
>CD45_LsgRNA2
CCAGAAACGCCTAAGCCTAGTTGTGGGGAT
>CD45_LsgRNA3
AAGGAAAGCAGACTTATGGAGACATGGAAG
>CD45_LsgRNA4
AGCAAAAGGCCACAGTTATTGTCATGGTCA
>CD45_LsgRNA5
TCCAAAATGCTAAGTGTGGAAATGAGGATT
>CD45_LsgRNA6
TTCCAACAAAATGTCAGAATGGATTGGCTC
>CD45_LsgRNA7
GATGAACAACAGGAACTCGTTGAAAGGGGT
>CD45_LsgRNA8
CAGGAACCCCATGGTCTGGCCAGCTGGTGA
>CD45_LsgRNA9
CAAGAAGAAAATAAGAAGAAGAACAGGAAT
>CD45_LsgRNA10
CTAAAAGAAACGATCGGTGACTTTTGGCAG
>CD45_LsgRNA11
GGCCAAGCATGGAGGAAGGCACTCGGGCTT
>CD45_LsgRNA12
TGGAAAGTGCAGAAACAGAAGATGTGGTTG
>CD45_LsgRNA13
CCTGAATCATAGACACCAGGTCTTTGGGTT
>CD45_LsgRNA14
TGTCAATGGGAAGATTCAAAGAAATGGGAC
>CD45_LsgRNA15
ATGAACAACAGGAACTCGTTGAAAGGGGTG
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>CD45_LsgRNA136
ATGTGGTCCTCCTTATGAAACTAATGGCCC
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>CD45_LsgRNA143
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>CD45_LsgRNA145
GCTTGTGATACTTCATCCCTTCTGGGGAAG
>CD45_LsgRNA146
CCGTGTGGAACTCTCTGAAATAAATGGAGA
>CD45_LsgRNA147
GAGTGTGGGTACCTACCATCACAAAGGATG
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GTTTGTTCCCTTAGTGCTGGTGTTGGGCGT
>CD45_LsgRNA149
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>CD45_LsgRNA151
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>CD45_LsgRNA154
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CACTTCACCTCGGATTGCAGAGGAAGGAGC
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AGCCTCCAGAGGGGAGGGGTCACTGGGTGG
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>CD45_LsgRNA181
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GAATTGATGCCATGCTGGAAGGCCTGGAAG
>CD45_LsgRNA184
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ACCTTGTGCAGCAATGTATTTCCTGGGTTC
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AGTCTGTGCTCAGTACTGGGGCGAAGGAAA
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CAGCTTCCTAACCTGCAGTGGACGAGGATG
>CD45_LsgRNA203
AGACTTCCTTCATACAGGAGTTGGAGGACA
>CD45_LsgRNA204
TTCTTTGAATCTTCCCATTGACATAGGCAA
>CD45_LsgRNA205
AAGGTTGTCCAACTGACATCTTTCAGGTAT
>CD45_LsgRNA206
ATGCTTGTGATACTTCATCCCTTCTGGGGA
>CD45_LsgRNA207
TACCTTGTGCAGCAATGTATTTCCTGGGTT
>CD45_LsgRNA208
AGATTTTATACAAAACAACAAGCAAGGCTA
>CD45_LsgRNA209
CTCTTTTCACAATGGAGTGTACGAGGGAGA
>CD45_LsgRNA210
TATGTTTCCAACAAAATGTCAGAATGGATT

(33) $\mathbb{S}_{16}^{-}$: 49 low on-target activity sgRNAs targeting THY1

>THY1_LsgRNA1
CAATAAAAGTATCAGTGTGTATAGAGGTGA
>THY1_LsgRNA2
CACAAAAGTAGTCGCCCTCATCCTTGGTGG
>THY1_LsgRNA3
AGAGAAGAGGAAGCACGTGCTCTCAGGCAC
>THY1_LsgRNA4
ATCCACAGACAAGCTGGTCAAGTGTGGCGG
>THY1_LsgRNA5
AAGCACGTGCTCTCAGGCACCCTTGGGATA

>THY1_LsgRNA6
CGGTACGTGTGCTCGGGTATCCCAAGGGTG
>THY1_LsgRNA7
CATCAGCGTCGCTCTCCTGCTCTCAGGTAC
>THY1_LsgRNA8
GAGCAGGAGAGCGACGCTGATGGCTGGGTT
>THY1_LsgRNA9
ATCCAGGATGTGTTCTGAACCAGCAGGCTT
>THY1_LsgRNA10
GGCTAGGGTAAGGACCTTGATATAGGGCTG
>THY1_LsgRNA11
ACTCATGCTGGATGGAGTTATCCTTGGTGT
>THY1_LsgRNA12
TAGCCAACTTCACCACCAAGGATGAGGGCG
>THY1_LsgRNA13
GGTTCACCAGGCAGGCTGTCAGGCTGGTCA
>THY1_LsgRNA14
GAAGCACGTGCTCTCAGGCACCCTTGGGAT
>THY1_LsgRNA15
AGAGCACGTGCTTCCTCTTCTCTCGGGTCA
>THY1_LsgRNA16
AAGGCACTGCTGTGCCAGTCTTGCAGGTGT
>THY1_LsgRNA17
GGGTCAGGCTGAACTCATGCTGGATGGAGT
>THY1_LsgRNA18
ACTGCCGCCATGAGAATAACACCAAGGATA
>THY1_LsgRNA19
CTGCCCTCGGGACACCTGCAAGACTGGCAC
>THY1_LsgRNA20
TCATCCTTGGTGGTGAAGTTGGCTAGGGTA
>THY1_LsgRNA21
GACGCGGGAGCGGTACGTGTGCTCGGGTAT
>THY1_LsgRNA22
CGCCCTCATCCTTGGTGGTGAAGTTGGCTA
>THY1_LsgRNA23
CCCTCTCCAACCAGCCCTATATCAAGGTCC
>THY1_LsgRNA24
GACCCTTGCCCAGTACCTGAGAGCAGGAGA
>THY1_LsgRNA25
AGGTGACCAGCCTGACAGCCTGCCTGGTGA
>THY1_LsgRNA26
TAAGGACCTTGATATAGGGCTGGTTGGAGA
>THY1_LsgRNA27
GAGCGACGCTGATGGCTGGGTTCATGGTGC

>THY1_LsgRNA28
CTGAGAGCAGGAGAGCGACGCTGATGGCTG
>THY1_LsgRNA29
GAGAGCACGTGCTTCCTCTTCTCTCGGGTC
>THY1_LsgRNA30
TCTTGCAGGTGTCCCGAGGGCAGAAGGTGA
>THY1_LsgRNA31
TGACGCGGGAGCGGTACGTGTGCTCGGGTA
>THY1_LsgRNA32
TCAGGCTGGTCACCTTCTGCCCTCGGGACA
>THY1_LsgRNA33
TAGGGCTGGTTGGAGAGGGTGACGCGGGAG
>THY1_LsgRNA34
ACGTGCTTCCTCTTCTCTCGGGTCAGGCTG
>THY1_LsgRNA35
AGCAGGAGAGCGACGCTGATGGCTGGGTTC
>THY1_LsgRNA36
TGGCGGCAGTCCAGGCGAAGGTTTTGGTTC
>THY1_LsgRNA37
GTCAGGCTGGTCACCTTCTGCCCTCGGGAC
>THY1_LsgRNA38
GCCTGGTGAACCAAAACCTTCGCCTGGACT
>THY1_LsgRNA39
TTTTGGTTCACCAGGCAGGCTGTCAGGCTG
>THY1_LsgRNA40
AAAAGTAGTCGCCCTCATCCTTGGTGGTGA
>THY1_LsgRNA41
TCAAGTGTGGCGGCATAAGCCTGCTGGTTC
>THY1_LsgRNA42
AGGGTAAGGACCTTGATATAGGGCTGGTTG
>THY1_LsgRNA43
TGGCTAGGGTAAGGACCTTGATATAGGGCT
>THY1_LsgRNA44
GAGTTATCCTTGGTGTTATTCTCATGGCGG
>THY1_LsgRNA45
GTGTTATTCTCATGGCGGCAGTCCAGGCGA
>THY1_LsgRNA46
GAGTTCAGCCTGACCCGAGAGAAGAGGAAG
>THY1_LsgRNA47
ACCTTGATATAGGGCTGGTTGGAGAGGGTG
>THY1_LsgRNA48
TGGTTGGAGAGGGTGACGCGGGAGCGGTAC
>THY1_LsgRNA49
CCCCTTCTCTATCCACAGACAAGCTGGTCA

(34) $\mathbb{S}_{17}^{-}$: 110 low on-target activity sgRNAs targeting CD43

>CD43_LsgRNA1
ACAGAAACTGATGGGCTGGCATTCTGGGCT
>CD43_LsgRNA2
CCCCAAAGAGGAGGAGAAGGTGCAAGGCCA
>CD43_LsgRNA3
TGGAAACTACTGAATTGTCTTCTTTGGAGA
>CD43_LsgRNA4
CAGAAACTGATGGGCTGGCATTCTGGGCTT
>CD43_LsgRNA5
CTGGAAGCAGTGCTGATGTCTTGCTGGAAA
>CD43_LsgRNA6
CTCGAAGGAGACCATCAGCCCCTGGGGGCA
>CD43_LsgRNA7
GACAACAAGCTCTAACGAGACCAGTGGACC
>CD43_LsgRNA8
TGTCACAGGATTGGCTGCAGTGACAGGAGG
>CD43_LsgRNA9
TACAACAGTAAGCTCCAAGACCAGTGGTCC
>CD43_LsgRNA10
TGTCACCACAGCTACTGGGTCTCTGGGGCC
>CD43_LsgRNA11
AACCACCACCAAGGCAATAAGCATGGGCAC
>CD43_LsgRNA12
AGAGACCCAGTAGCTGTGGTGACAGGGGGA
>CD43_LsgRNA13
CTGTACCTGAGCCTACTGCCTCTCAGGAAG
>CD43_LsgRNA14
GGTGACCTGGTGGTTATGGGATCTTGGGTA
>CD43_LsgRNA15
CCACACTGGAACTCTCCACAGAACTGGTTG
>CD43_LsgRNA16
AGGTACTTGGAGCTGTGATATGTGGGGTAG
>CD43_LsgRNA17
GCCAAGAATCAAGTGGCATGTTACTGGTGC
>CD43_LsgRNA18
CGTTAGAGCTTGTTGTCACAGTGGTGGGGG
>CD43_LsgRNA19
CGCCAGAGGCAAAAGCGGAGGACTGGGGCC
>CD43_LsgRNA20
TTAGAGCTTGTTGTCACAGTGGTGGGGGGT
>CD43_LsgRNA21
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>CD43_LsgRNA22
TGAGAGGCAGTAGGCTCAGGTACAGGGGTG
>CD43_LsgRNA23
GCTCAGGTACAGGGGTGCTCATGCTGGCAC
>CD43_LsgRNA24
CTGCAGGTCCGTCTGTCACAGGATTGGCTG
>CD43_LsgRNA25
AGGGAGTCCATGCATCTCACTCGAGGGCCC
>CD43_LsgRNA26
TAACATGCCACTTGATTCTTGGCTTGGTGA
>CD43_LsgRNA27
CAGCATGCCCCAAAGAGGAGGAGAAGGTGC
>CD43_LsgRNA28
GCCACAACAGCAGTAGCGCCACGAGGGCCA
>CD43_LsgRNA29
TTGTCACAGTGGTGGGGGGTGCACTGGTTC
>CD43_LsgRNA30
CTGTCACCACAGCTACTGGGTCTCTGGGGC
>CD43_LsgRNA31
AAACCACCACCAAGGCAATAAGCATGGGCA
>CD43_LsgRNA32
GCGCCAGAGGCAAAAGCGGAGGACTGGGGC
>CD43_LsgRNA33
AGCCCATCAGTTTCTGTGGGGTCAGGGACA
>CD43_LsgRNA34
TGCCCATGCTTATTGCCTTGGTGGTGGTTT
>CD43_LsgRNA35
GTTTCCAAGGGGGTCAAAGAAACTGGGATT
>CD43_LsgRNA36
AGACCCAGTAGCTGTGGTGACAGGGGGACC
>CD43_LsgRNA37
CAGCCCATCAGTTTCTGTGGGGTCAGGGAC
>CD43_LsgRNA38
GAGACCCAGTAGCTGTGGTGACAGGGGGAC
>CD43_LsgRNA39
CAATCCCAGTTTCTTTGACCCCCTTGGAAA
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CTGACCCCACAGAAACTGATGGGCTGGCAT
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>CD43_LsgRNA48
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CAGAGACCCAGTAGCTGTGGTGACAGGGGG
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