Table S1. Oligos used for genome editing and PCRs.

NOMe PCR Amplicons	strand	sequence
chr4:135534271-135535026	Fwd_1	ttgtttttataatattaggtttagggt
	Fwd_2	tagggttatagatttatatttgtgg
	Rev_1	AaACTCAACCCCACCACAaATATCTCAA
	Rev_2	aTCTTTAAaAaTAAaAAaaTTTCTaAaAAC
chr5:103691073-103691705	Fwd_1	AtAtTTTtTGGATtTTATtTTtAATAtAAtt
	Rev_1	ACAAAAaTCACTTACTTAaATAAACTATCCAaTa
	Rev_2	CTATCCAaTaTCTAaaaAAAAaAaTATAATa
chr5:113963199-113963929	Fwd_1	GGTtAAAATTTAGGAAAAtAGAtAGAGTt
	Fwd_2	GGGGAGTtttAGGTAGAATATGAGTtTGG
	Rev_1	TTTaTTTCTCCTaaaTCCCTCTaTCCCTaTaaT
	Rev_2	CAaTaTCTCCCTATTaAaACCCTaT
chr8:64676254-64677021	Fwd_1	GTTTtAtTGAtAAAATGAAAATtTGAtAGTG
	Fwd_2	ttAAAtTGGGGAtAAAtAGGTtAATATG
	Rev_1	taaaattcataaaaatccacctacttca
	Rev_2	ttcctaaatactaaaattaaaaatat
chr8:123132736-123133458	Fwd_1	tttttgagtgttgggaatttaagtgtga
	Fwd_2	tTGTATGTAtgtagatggttgtga
	Rev_1	tcttacaaaaaaccaaaatttaattctca
chr9:118708066-118708565	Fwd_1	TGTtTGTtTATATGGTTAAAGAAAATTAG
	Fwd_2	GTTAtTTTTAGTAAGTTTATTAAAATTGAG
	Rev_1	aTCTaAAaAATTTCCCCAAAaTCAaAa
chr10:81577506-81578424	Fwd_1	Atttatttaattttatatgtatgggtgttttg
	Fwd_2	atgtatgggtgttttgtttatatatttgt
	Rev_1	aaaatatctcaataaataaaaatatt
chr11:19860509-19861184	Fwd_1	ttAAGGAtttTAttTGTTTttAgtagtgg
	Fwd_2	tgtaattttattagttaggaggttga
	Rev_1	cattcttaattaaaattcttaactaAAaaTaaa
chr13:37461486-37462258	Fwd_1	gggagattttattttatttaaaataGTAT
	Fwd_2	AtTtTTTTtttTAtAAAttAAAGTTttAAGAA
	Rev_1	aATaaAAAACAACAACAACAACAAAAATTaTC
	Rev_2	AaTAaACATaaTAaaTAATAaaAaaACACATC
chr18:34114859-34115360	Fwd_1	GTTGGAATttTGAttAAGAAGAGTATG
	Fwd_2	GATTTTtAtAAATAATTttAtAtAtTTAAGGG
	Rev_1	CaTTTTAaAAAACACAACAAAAACCATAACA
	Rev_2	TAATTACCTTTaaaATaTTTAAaTCTTAA
Chr15:97952351:97952777	Fwd_1	TGTTATGTTTTTGGGATTTATTGAAT
	Rev_1	CCTTTCCCAATCCTAAACTAACT
Chr2:32912400:32912825	Fwd_1	ATTGGGGGTTTATGGGATTAATAG
	Rev_1	TATTCACATCTCTCTACAAAAACCA
chr8:70873668:70874090	Fwd_1	TGTTTAATTATTTTTGAGATAGTGTT
	Rev_1	CCATCTCAAATATTAATAAACAAAAA
chr11:62756820:62757164	Fwd_1	ATGAAGAGTTTTTGAATGAAGGTTAA
	Rev_1	CTTAAATTATCCACCCTCCTCTCTAA
chr4:130138383:130138741	Fwd_1	AGGGAGATATTAAAGATTTAGGTTT
	Rev_1	CATCCTCTTAACACCAATCTAAAAT

oligos for generating gRNA pools	strand	sequence
to amplify guidedNOMe libraries from ends of	fwd	AATGATACGGCGACCACCGAGAT
to amplify guidedNOMe libraries from ends of	rev	CAAGCAGAAGACGGCATACGAGA
Fwd In vitro sgRNA Twist Oligo pool amplificat	fwd	aagcTAATACGACTCACTATAGG
Rev In vitro sgRNA Twist Oligo pool amplificat	rev	AAAAGCACCGACTCGGTG

oligos for genome editing	strand	sequence
Adnp-avi-FLAG-FKBP12-Neongreen HR donor	gBLOCK	aaaGGCTACAGTGCAAGATGACACAGAGCAGTTAAAATGGAAGAATA
Adnp 3' tagging genotyping primer FWD	fwd	GGTCCAAGGACCAGTCACAG
Adnp 3' tagging genotyping primer REV	rev	CTGACCAGTCCTTGCAAGGT
Ctcf-FKBP12-2xHA HR donor gBLOCK		TGTCAGTATTTGGTATCTGACAATTTCTAGCCTTTTGGGATTTTATGTC
Ctcf genotyping	fwd	GCATGCCATCCTACTGGTGTGC
Ctcf genotyping	rev	GCATGCCATCCTACTGGTGTGC
Ctcf gRNA oligo	fwd	aaacCAGCATGATGGACCGGTGATc
Ctcf gRNA oligo	rev	caccgATCACCGGTCCATCATGCTG

Adnplys407 mutation HR donor gBLOCK		GATAGCTCCCAAACCTCAAGACAAAAAGGGCATGGGACTCCCACCAC
Adnplys407 genotyping	fwd	GAGGACCATGAACGGATAGG
Adnplys407 genotyping	rev	ACTTTTGGTTGTGGCTTTGG
Adnplys407 gRNA oligo	fwd	caccgGGGAGACTTCACTTGGCCTG
Adnplys407 gRNA oligo	rev	aaacCAGGCCAAGTGAAGTCTCCCc