Data S1.

The XM709442 Sash1-hSASH1(Y551D) Cas9-KI Targeted Genomic Sequence hSASH1(Y551D)-CDS is shown in green; the polyA is shown in grey; the exon1 is shown in blue; the mutation site is shown in red.

19441 CTTTGT TTTCCA AGAAGC CTGACA GACAGG ACTGTA ATTCCA GGGGTT GTCACC ATACGG
19501 ACTCCT CTTAAA CTCGAA CTCAGC GAGCGG CTTAAA GATTAA CTTTCT GCAGTT TCAGTG
19561 GCGGAA GGCGCG GGTGAA TGGCGC GATTGG GGACTT GTGCAG GGCCCC GGGCCC GTGGCG
19621 CGGTGG CGCTTT CAAAAG GCGATT TGTTGG CCAGGC TGAGGC TCATTT CCATGC AAAGCG
19681 CCTGAC ATCAGA GCACCT TTTGTT GCTAAA CGCTTT CTTGAG CCTGGA GGGGAG GGAGTC
19741 ATGTGG AGTTGG AAGAGC TCATTC TAAAGA GAGGGG TCCAGG ACTAAT TAGCCC GGGTCC
19801 ACAGGC GTCACT GTCCCC TGCCCA GCCCTG CACAAA CTCTCC AGTAGA GGCGAG TCGTGT
19861 GCCACC CGGAGC CGGTCC CCGAAG CAGGAC GCAGCA CCCGTG CGGTGT GGCTCT TGTCTC
19921 CCTGGT CTCGTG AACTCC CCGCCG CAGCCA GTGTTG TGGACT CTGCTC CAGCTA CCCTGT
19981 TGCTGC GCCCGG CCCGGC TAGGAA AAGTTT CTGGAG TTGTCA ATCGCG GTCGCC CGGGAT
20041 CGAGGT GCCAGT CCTGGC AGTGGT GCTCGT ACCCAG CGGAGC CTGGGG CATGCG ACGCGG
20101 GGGCGC GGCCCG GTGACG CCGCGG GCGGAG AACTTG CGCCCC GTCGGC CGACGC GCTGCT
20161 GCGAGC GGTGGG CAGCGC GGGGAC CCGGAC GCGGAC GCACGG GGACGC GGCCAT GGAGGA
20221 CGCGGG AGCAGC TGGCCC GGGGCC GGAGCC TGAGCC CGAGCC CGAGCC GGAGCC CGAGCC
20281 CGCGCC GGAGCC GGAACC GGAGCC CAAGCC GGGTGC TGGCAC ATCCGA GGCGTT CTCCCG
20341 ACTCTG GACCGA CGTGAT GGGTAT CCTGGA CGGTTC ACTGGG AAACAT CGATGA CCTGGC
20401 GCAGCA GTATGC AGATTA TTACAA CACCTG TTTCTC CGACGT GTGCGA GAGGAT GGAGGA
20461 GCTGCG GAAACG GCGGGT TTCCCA GGACCT GGAAGT GGAGAA ACCCGA TGCTAG CCCCAC
20521 GTCACT TCAGCT GCGGTC CCAGAT CGAAGA GTCGCT TGGCTT CTGTAG CGCCGT GTCAAC
20581 CCCAGA AGTGGA AAGAAA GAACCC TCTTCA TAAATC AAACTC AGAAGA CAGCTC TGTAGG
20641 AAAAGG AGACTG GAAGAA GAAAAA TAAGTA TTTCTG GCAGAA CTTCCG AAAGAA CCAGAA
20701 AGGAAT AATGAG ACAGAC TTCAAA AGGAGA AGACGT TGGTTA TGTTGC CAGTGA AATAAC
20761 GATGAG CGATGA GGAGCG GATTCA GCTAAT GATGAT GGTCAA AGAAAA GATGAT CACAAT
20821 TGAGGA AGCACT TGCTAG GCTCAA GGAATA CGAGGC CCAGCA CCGGCA GTCGGC TGCCCT
20881 GGACCC TGCTGA CTGGCC AGATGG TTCTTA CCCAAC GTTTGA TGGCTC ATCAAA CTGCAA
20941 TTCAAG AGAACA ATCGGA TGATGA GACTGA GGAGTC GGTGAA GTTTAA GAGGTT ACACAA
21001 GCTGGT AAACTC CACTCG CAGAGT CAGAAA GAAACT AATTAG GGTGGA AGAAAT GAAAAA
21061 ACCCAG CACTGA AGGTGG GGAGGA GCACGT GTTTGA GAATTC GCCGGT CCTGGA TGAACG
21121 GTCCGC CCTCTA CTCTGG CGTGCA CAAGAA GCCCCT TTTCTT TGATGG CTCTCC TGAGAA
21181 ACCTCC CGAAGA TGACTC AGACTC TCTCAC CACGTC TCCATC CTCCAG CAGCCT GGACAC
21241 CTGGGG GGCTGG CCGGAA GTTGGT CAAAAC CTTCAG CAAAGG AGAGAG CCGGGG CCTGAT
21301 TAAGCC CCCCAA GAAGAT GGGGAC ATTCTT CTCCTA CCCAGA AGAAGA AAAGGC CCAGAA
21361 AGTGTC CCGCTC CCTCAC CGAGGG GGAGAT GAAGAA GGGTCT CGGGTC CCTAAG CCACGG
21421 GAGAAC CTGCAG TTTTGG AGGATT TGACTT GACGAA TCGCTC TCTGCA CGTTGG CAGTAA
21481 TAATTC TGACCC AATGGG TAAAGA AGGAGA CTTTGT GTACAA AGAAGT CATCAA ATCACC
21541 TACTGC CTCTCG CATCTC TCTTGG GAAAAA GGTGAA ATCAGT GAAAGA GACGAT GAGAAA
21601 GAGAAT GTCTAA AAAATA CAGCAG CTCTGT CTCTGA GCAGGA CTCGGG CCTTGA TGGAAT
21661 GCCTGG CTCCCC TCCGCC TTCACA GCCCGA CCCCGA ACACTT GGACAA GCCCAA GCTCAA

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21721  GGCCGG GGGTTC TGTAGA AAGTCT TCGCAG TTCTCT CAGTGG GCAGAG CTCCAT GAGCGG
21781  TCAAAC AGTGAG CACCAC TGATTC CTCAAC CAGCAA CCGGGA AAGCGT CAAGTC GGAAGA
21841  TGGGGA TGACGA AGAGCC GCCTGA CCGAGG CCCGTT CTGCGG GCGTGC CAGGGT GCACAC
21901  CGACTT CACCCC CAGTCC CTATGA CACAGA CTCACT CAAGCT CAAGAA AGGAGA TATCAT
21961  CGATAT AATCAG CAAGCC ACCCAT GGGGAC CTGGAT GGGCCT GCTGAA CAACAA AGTCGG
22021  CACGTT CAAGTT CATCTA CGTGGA CGTGCT CAGTGA AGACGA GGAGAA ACCCAA ACGCCC
22081  CACCAG GAGGCG TCGGAA AGGACG ACCACC CCAGCC CAAGTC TGTGGA GGATCT CCTGGA
22141  TCGGAT TAACCT AAAAGA GCACAT GCCCAC TTTCCT GTTCAA TGGATA TGAAGA TTTGGA
22201  CACCTT TAAGCT GCTGGA GGAGGA AGACTT GGATGA GTTAAA TATCAG GGACCC GGAACA
22261  CAGAGC TGTTCT CTTGAC AGCAGT GGAGCT GTTACA AGAGTA TGACAG TAACAG CGACCA
22321  GTCAGG ATCCCA GGAGAA GCTGCT CGTTGA CAGCCA GGGCCT GAGTGG ATGCTC ACCCCG
22381  AGACTC AGGATG CTACGA AAGCAG TGAGAA CCTGGA AAACGG CAAGAC TCGGAA AGCTAG
22441  CCTCCT ATCTGC CAAGTC ATCCAC CGAGCC CAGCTT GAAGTC TTTTAG CAGAAA CCAGTT
22501  GGGCAA TTACCC AACATT GCCTTT AATGAA ATCAGG GGATGC ACTGAA GCAGGG ACAGGA
22561  GGAGGG CAGGCT GGGTGG TGGCCT TGCCCC AGACAC GTCCAA GAGCTG TGACCC ACCTGG
22621  TGTGAC TGGTTT GAATAA AAACCG AAGAAG CCTCCC AGTTTC CATCTG CCGGAG CTGTGA
22681  GACCCT GGAGGG CCCCCA GACTGT GGACAC TTGGCC CCGATC CCATTC CCTGGA TGACCT
22741  TCAAGT GGAGCC TGGTGC TGAGCA AGACGT GCCTAC CGAGGT GACAGA ACCGCC CCCTCA
22801  GATTGT ACCTGA AGTGCC ACAGAA GACGAC CGCCTC TTCCAC GAAGGC CCAGCC CCTGGA
22861  GCAAGA CTCTGC TGTCGA CAATGC ATTGCT ACTGAC CCAAAG CAAGAG ATTTTC TGAACC
22921  TCAGAA ATTGAC AACTAA GAAACT GGAGGG CTCAAT CGCAGC CTCTGG TCGCGG CCTGTC
22981  ACCCCC TCAGTG TTTGCC CAGAAA CTATGA TGCTCA GCCTCC TGGAGC TAAACA CGGTTT
23041  AGCAAG GACGCC TCTGGA GGGCCA CAGAAA AGGACA CGAGTT TGAAGG AACACA CCATCC
23101  CCTGGG CACCAA AGAAGG GGTAGA TGCTGA GCAGAG AATGCA GCCCAA AATTCC ATCACA
23161  GCCTCC ACCTGT TCCTGC CAAAAA GAGCAG AGAACG CCTTGC TAACGG ACTCCA CCCTGT
23221  TCCCAT GGGCCC CAGTGG GGCCCT CCCCAG TCCCGA TGCGCC ATGCCT GCCAGT GAAAAG
23281  GGGCAG CCCCGC CAGCCC CACCAG CCCTAG CGACTG TCCCCC AGCACT GGCTCC CAGGCC
23341  TCTCTC AGGGCA GGCGCC TGGCAG CCCACC AAGCAC AAGGCC GCCCCC CTGGCT CTCAGA
23401  GCTCCC CGAGAA CACAAG CCTCCA GGAGCA CGGTGT GAAGCT GGGCCC GGCTTT GACCAG
23461  GAAGGT CTCCTG TGCCCG GGGAGT GGATCT AGAAAC GCTCAC TGAAAA CAAGCT GCACGC
23521  TGAAGG CATCGA TCTCAC GGAGGA GCCGTA TTCTGA TAAGCA TGGCCG CTGTGG GATTCC
23581  TGAAGC CCTGGT GCAGAG ATACGC AGAGGA CTTGGA TCAGCC CGAGCG GGACGT CGCCGC
23641  CAACAT GGACCA GATCCG GGTGAA GCAGCT TCGGAA GCAGCA CCGCAT GGCGAT TCCAAG
23701  TGGTGG ACTCAC GGAAAT CTGCCG AAAGCC CGTCTC TCCTGG GTGCAT TTCGTC TGTGTC
23761  AGATTG GCTCAT TTCCAT CGGTCT GCCCAT GTACGC CGGCAC CCTCTC CACCGC GGGCTT
23821  CAGCAC ACTGAG CCAAGT GCCTTC TCTGTC TCACAC TTGCCT TCAGGA GGCCGG CATCAC
23881  AGAGGA GAGACA CATAAG AAAGCT CCTATC TGCAGC CAGACT CTTCAA ACTGCC GCCAGG
23941  CCCTGA GGCCAT GTAGAC TCCTCA GGTGCA GGCTGC CTATCA GAAGGT GGTGGC TGGTGT
24001  GGCCAA TGCCCT GGCTCA CAAATA CCACTG AGATCT TTTTCC CTCTGC CAAAAA TTATGG
24061  GGACAT CATGAA GCCCCT TGAGCA TCTGAC TTCTGG CTAATA AAGGAA ATTTAT TTTCAT
24121  TGCAAT AGTGTG TTGGAA TTTTTT GTGTCT CTCACT CGGAAG GACATA TGGGAG GGCAAA
24181  TCATTT AAAACA TCAGAA TGAGTA TTTGGT TTAGAG TTTGGC AACATA TGCCCA TATGCT
24241  GGCTGC CATGAA CAAAGG TTGGCT ATAAAG AGGTCA TCAGTA TATGAA ACAGCC CCCTGC
24301  TGTCCA TTCCTT ATTCCA TAGAAA AGCCTT GACTTG AGGTTA GATTTT TTTTAT ATTTTG
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24361  TTTTGT GTTATT TTTTTC TTTAAC ATCCCT AAAATT TTCCTT ACATGT TTTACT AGCCAG
24421  ATTTTT CCTCCT CTCCTG ACTACT CCCAGT CATAGC TGTCCC TCTTCT CTTATG GAGATC
24481  CCTCGA CCTGCA G ATGGA GGAGGA CGCCGG AGCTGC TAGCCC GGCGCC GGAGCC TGAGCC
24541  GGAGGT GGATCC CGCCCG GGAGCT GGAGCC CGAGGC CGGTGT CTCCGA GTCAAT CTCCCG
24601  CCTCTG GACCGA CGTGAT GGGCAT CCTGGT GAGCTA CCTGGG GAGGCA GGCGGG GGAAGC
24661  GGGGCT CACCCC TCGCCC ACCTAT TGGTCA CCCTTC TTCTTT CCGCTG TATTCT CTATAT
24721  AGGGGT TGAAAC TGTAAT TTAGAA AAACCA AACCAA ACCAAA CCAACC AAACAA AAAAAA
24781  ACCCCT ACTTGT CGGGTC ACATCA GAGACA CCTCTT GAACAA TCGACT GTAATT AGGGAC
24841  ACCTGC TTAGAA AAGTTG GCGTGG AAAAAG CCAGAA AGAGTA GATGTA AATACT ACTTGT
24901  AAATAT TTGGCG AGTGGA CTCCTC ATGGCC TCTCGG TATTGA TGTTTA TCCGCA CAGGGC
24961  TTGTCC TGTGCC CATGAG AGGAAA ACAACC GTTTCC TTGTGC AGAACT ACCACG GTGTTT
25021  ACTTGC TCTGCC CTCAGC TCTTCT AGTTTG TAGAAT TACAGG ATATTT GTTTTA TATGTT
25081  TGGCGC TGAGAA CAATAA GGCATA TATTGC TGAATC TGTGCT GATAAG GGGTTT TGAACT
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