

Supplementary Table 1. sgRNA and target DNA sequences used for *in vitro* cleavage assay.

Name	Sequence
sgRNA20	GGAAAUUAGGUGCGCUUGGCGCUAUAGUUCCUUGAAAAAGUUGCUAUAGUAAGGGC AACAGACCCGAGGCGUUGGGGAUCGCCUAGCCCGUUUUUACGGGCUCUCCCCAU
sgRNA21	GGGAAAUUAGGUGCGCUUGGCGCUAUAGUUCCUUGAAAAAGUUGCUAUAGUAAGGG CAACAGACCCGAGGCGUUGGGGAUCGCCUAGCCCGUUUUUACGGGCUCUCCCCAU
sgRNA22	GGGGAAAUUAGGUGCGCUUGGCGCUAUAGUUCCUUGAAAAAGUUGCUAUAGUAAGG GCAACAGACCCGAGGCGUUGGGGAUCGCCUAGCCCGUUUUUACGGGCUCUCCCCAU
sgRNA23	GGGGGAAAUUAGGUGCGCUUGGCGCUAUAGUUCCUUGAAAAAGUUGCUAUAGUAAG GGCAACAGACCCGAGGCGUUGGGGAUCGCCUAGCCCGUUUUUACGGGCUCUCCCCAU
Target DNA	AGCGCCAATACGCAAACCGCCTCTCCCCGCGCGTTGGCCGATTCATTAATGCAGCTGG CACGACAGGTTTCCCGACTGGAAAGCGGGCAGTGAGCGCAACGCAATTAATGTGAGTT AGCTCACTCATTAGGCACCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGTG GAATTGTGAGCGGATAACAATTTACACAGGAAACAGCTATGACCATGATTACGCCAA GCTTGCATGCCTGCAGGTCGACTCTAGAGGATCCCCGGGTACCGAGCTCGAATTCAGTG GCCGTCGTTTTACAACGTCGTGACTGGGAAAACCCCTGGCGTTACCCAACTTAATCGCCT TGCAGCACATCCCCCTTTCGCCAGCTGGCGTAATAGCGAAGAGGCCCCGCACCGATCGCC CTTCCCAACAGTTGCGCAGCCTGAATGGCGAATGGCGCCTGATGCGGTATTTTCTCCTTA CGCATCTGTGCGGTATTTACACCCGCATACGTCAAAGCAACCATAGTACGCGCCCTGTA GCGGCGCATTAAAGCGCGGCGGGTGTGGTGGTTACGCGCAGCGTGACCGCTACACTTGCC AGCGCCCTAGCGCCCGCTCCTTTCGCTTTCTTCCCTTCTTTCTCGCCACGTTGCGCCGGCT TTCCCGCTCAAGCTCTAAATCGGGGGCTCCCTTTAGGGTTCCGATTTAGTGCTTTACGGC ACCTCGACCCCAAAAACTTGATTTGGGTGATGGTTCACGTAGTGGGCCATCGCCCTGA TAGACGGTTTTTTCGCCCTTGACGTTGGAGTCCACGTTCTTTAATAGTGGACTCTTGTTT CAAACCTGGAACAACACTCAACCCTATCTCGGGCTATTCTTTTGATTTATAAGGGATTTTG CCGATTTTCGGCCTATTGGTTAAAAAATGAGCTGATTTAACAAAAATTTAACGCGAATTT TAACAAAATATTAACGTTTACAATTTTATGGTGCACCTCTCAGTACAATCTGCTCTGATGC CGCATAGTTAAGCCAGCCCCGACACCCGCCAACACCCGCTGACGCGCCCTGACGGGGCTT GTCTGCTCCCGGCATCCGCTTACAGACAAGCTGTGACCGTCTCCGGGAGCTGCATGTGT CAGAGGTTTTACCGTCATCACCGAAACGCGCGAGACGAAAGGGCCCTCGTGATACGCC TATTTTTATAGGTTAATGTCATGATAATAATGGTTTCTTAGACGTCAGGTGGCACTTTTC GGGGAAATGTGCGCGGAACCCCTATTTGTTTATTTTCTAAATACGGGGGAAAUUAGG UGCGCUUGGCTTTCGAAATGTATCCGCTCATGAGACAATAACCCTGATAAATGCTTCAA TAATATTGAAAAAGGAAGAGTATGAGTATTCAACATTTCCGTGTGCCCCTTATTCCTTT TTTGCGGCATTTTGCCTTCTGTTTTTGTCTACCCAGAAACGCTGGTGAAAGTAAAAGAT GCTGAAGATCAGTTGGGTGCACGAGTGGGTTACATCGAACTGGATCTCAACAGCGGTAA GATCCTTGAGAGTTTTCGCCCCGAAGAACGTTTTCCAATGATGAGCACTTTTAAAGTTCT GCTATGTGGCGCGGTATTATCCCGTATTGACGCCGGGCAAGAGCAACTCGGTGCGCCGA TACACTATTCTCAGAATGACTTGGTTGAGTACTACCCAGTCACAGAAAAGCATCTTACG GATGGCATGACAGTAAGAGAATTATGCAGTGCTGCCATAACCATGAGTGATAACACTGC GGCCAACTTACTTCTGACAACGATCGGAGGACCGAAGGAGCTAACCCTTTTTTGCACA ACATGGGGGATCATGTAACCTCGCCTTGATCGTTGGGAACCGGAGCTGAATGAAGCCATA CCAAACGACGAGCGTGACACCACGATGCCTGTAGCAATGGCAACAACGTTGCGCAAAAC TATTAACCTGGCGAACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGAG GCGGATAAAGTTGCAGGACCACTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTGCT GATAAATCTGGAGCCCGGTGAGCGTGGGTCTCGCGGTATCATTGCAGCACTGGGGCCAGA TGGTAAAGCCCTCCCGTATCGTAGTTATCTACACGACGGGGAGTCAGGCAACTATGGATG AACGAAATAGACAGATCGCTGAGATAGGTGCCTCACTGATTAAGCATTGGTAACTGTCA GACCAAGTTTACTCATATATACTTTAGATTGATTTAAAACCTTCATTTTTTAATTTAAAAGG ATCTAGGTGAAGATCCTTTTTTGATAATCTCATGACCAAAATCCCTTAACGTGAGTTTTTCG TTCCACTGAGCGTCAGACCCCGTAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTT CTGCGCGTAATCTGCTGCTTGCAAACAAAAAAACCACCGCTACCAGCGGTGGTTTGT GCCGGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAACCTGGCTTCAGCAGAGCGCAGA TACCAAATACTGTCTTCTAGTGTAGCCGTAGTTAGGCCACCACTTCAAGAACTCTGTAG CACCGCCTACATACCTCGCTCTGCTAATCCTGTTACCAGTGGCTGCTGCCAGTGGCGATA

Supplementary Table 1

	AGTCGTGTCTTACCGGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTCTG GGCTGAACGGGGGGTTCGTGCACACAGCCCAGCTTGGAGCGAACGACCTACACCGAAC TGAGATACCTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGAAGGGAGAAAGGC GGACAGGTATCCGGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCA GGGGGAAACGCCTGGTATCTTTATAGTCCTGTCGGGTTTCGCCACCTCTGACTTGAGCGT CGATTTTTGTGATGCTCGTCAGGGGGGCGGAGCCTATGGAAAAACGCCAGCAACGCGG CCTTTTTACGGTTCCTGGCCTTTTGCTGGCCTTTTGCTCACATGTTCTTTCCTGCGTTATC CCCTGATTCTGTGGATAACCGTATTACCGCCTTTGAGTGAGCTGATACCGCTCGCCGCAG CCGAACGACCGAGCGCAGCGAGTCAGTGAGCGAGGAAGCGGAAG
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The target sequence and the PAM sequence are colored red and purple, respectively.

Supplementary Table 2. sgRNA and target DNA sequence used for crystallization.

Name	Sequence
sgRNA	GGAAAUUAGGUGCGCUUGGCGCUAUAGUCCUUGAAAAAGUUGCUAUAGUAAGGG CAACAGACCCGAGGCGUUGGGGAUCGCCUAGCCCGUUUUUACGGGCUCUCCCCAU
Target strand	CCTTTAATCCACGCGAACCGAAAGGTTT
Non-target strand	TTTCCAAA

The target sequence and the PAM sequence are colored red and purple, respectively.

Supplementary Table 2

Supplementary Table 3. Plasmids used for *in vivo* editing experiments

Name	Sequence
pSI-545-BICas9	https://benchling.com/s/seq-cFTEo6rGaFhqDZfXSLsN?m=slm-wbUvTh9lDt2Eo0yMJAlI
pSI-545-RA	https://benchling.com/s/seq-pe3sJeepSoU6UgXl1Qn6?m=slm-BBLPiwfJSWn8vNLT4XeO
pSI-545-BICas9-AID	https://benchling.com/s/seq-IIUsGUG2mTg6qxpOv61z?m=slm-s5mMuOJNXQ4N7acQ5HM6
pSI-545-RA-AID	https://benchling.com/s/seq-wgJr7A0CVPuMYyEpbA95?m=slm-JxMQf7UfTuNQwaR0OELS
pSI-414-BICas9-sgRNA	https://benchling.com/s/seq-mDQV9quxozuz044hFKyc?m=slm-4KdqbicHQhwI4Zxg8ZS

Supplementary Table 3

Supplementary Table 4. Target sequences for genome- and base-editing analyses.

Gene	Sequence	PAM
DYRK1A	GCCCACCAGGTCCTCCTGTTTC	N ₄ CNAA
MECP2	GCTTGCTCGTATTCATTCAAAA	N ₄ CNAA
PTEN	GACTACAAGCCTCACTTCATTC	N ₄ CNAA
DYRK1A	GAGGTCTTTGAACTTCAAGTAG	N ₄ CNAC
MECP2	GACCAAAATAAACATCTTCTCA	N ₄ CNAC
PTEN	GGGCATTAAAATATATGCATTA	N ₄ CNAC
DYRK1A	GTAGGCCCTAGGGCAAGGTGGA	N ₄ CNAG
MECP2	GCTTGAGGGACTAAATGTCACC	N ₄ CNAG
PTEN	GATTCATGAAAGCCAAGACTTT	N ₄ CNAG
DYRK1A	GTGATCTAAAGTTAGAATAAGT	N ₄ CNAT
MECP2	GTGCTTGTCGGTAAGAAAAACA	N ₄ CNAT
PTEN	GAAGCCTGTCCCGCACTTCTTA	N ₄ CNAT
DYRK1A	GTCCGGACTAGATCTTACAATC	N ₄ CNCA
MECP2	GCTTCGTGGGAACCCTATGTGC	N ₄ CNCA
PTEN	GAGGCTTCCTTCCCTTAAGCGG	N ₄ CNCA
DYRK1A	GCAATTCTACTCTTAGACTGTG	N ₄ CNGA
MECP2	GTCACCAATTCAAGCCAGTTTG	N ₄ CNGA
PTEN	GAACTTGTCTTCCCGTCGTGTG	N ₄ CNGA
DYRK1A	GACCACTGACCCGGGCGGAACA	N ₄ CNTA
MECP2	GGCCAGACACAAAAGGCCAAAT	N ₄ CNTA
PTEN	GGTCACATACCAGAGATATGTG	N ₄ CNTA

Supplementary Table 4