

ZMYM5, ZN783, SPI2B, LRP1, MIXL1, SGT1, LMCD1, CEBPA, GATA2, SOX14, WTIP, PRP19, CBX6, NKX11, RBBP4, DMRT2, SMCA2 and fragments thereof.

[0011a] Also described herein is a method of modifying an epigenetic state of a target gene in a target chromosome, the method comprising contacting the target chromosome with an epigenetic editor, wherein the epigenetic editor comprises: (a) a first DNMT domain; (b) a DNA binding domain; and (c) a repressor domain, wherein the repressor domain is selected from the group consisting of: ZIM3, ZNF436, ZNF257, ZNF675, ZNF490, ZNF320, ZNF331, ZNF816, ZNF680, ZNF41, ZNF189, ZNF528, ZNF543, ZNF554, ZNF140, ZNF610, ZNF264, ZNF350, ZNF8, ZNF582, ZNF30, ZNF324, ZNF98, ZNF669, ZNF677, ZNF596, ZNF214, ZNF37A, ZNF34, ZNF250, ZNF547, ZNF273, ZNF354A, ZFP82, ZNF224, ZNF33A, ZNF45, ZNF175, ZNF595, ZNF184, ZNF419, ZFP28-1, ZFP28-2, ZNF18, ZNF213, ZNF394, ZFP1, ZFP14, ZNF416, ZNF557, ZNF566, ZNF729, ZIM2, ZNF254, ZNF764, ZNF785, ZNF10, CBX5, RYBP, YAF2, MGA, CBX1, SCMH1, MPP8, SUMO3, HERC2, BIN1, PCGF2, TOX, FOXA1, FOXA2, IRF2BP1, IRF2BP2, IRF2BPL IRF-2BP1_2 N-terminal domain, HOXA13, HOXB13, HOXC13, HOXA11, HOXC11, HOXC10, HOXA10, HOXB9, HOXA9, ZFP28, ZN334, ZN568, ZN37A, ZN181, ZN510, ZN862, ZN140, ZN208, ZN248, ZN571, ZN699, ZN726, ZIK1, ZNF2, Z705F, ZNF14, ZN471, ZN624, ZNF84, ZNF7, ZN891, ZN337, Z705G, ZN529, ZN729, ZN419, Z705A, ZNF45, ZN302, ZN486, ZN621, ZN688, ZN33A, ZN554, ZN878, ZN772, ZN224, ZN184, ZN544, ZNF57, ZN283, ZN549, ZN211, ZN615, ZN253, ZN226, ZN730, Z585A, ZN732, ZN681, ZN667, ZN649, ZN470, ZN484, ZN431, ZN382, ZN254, ZN124, ZN607, ZN317, ZN620, ZN141, ZN584, ZN540, ZN75D, ZN555, ZN658, ZN684, RBAK, ZN829, ZN582, ZN112, ZN716, HKR1, ZN350, ZN480, ZN416, ZNF92, ZN100, ZN736, ZNF74, CBX1, ZN443, ZN195, ZN530, ZN782, ZN791, ZN331, Z354C, ZN157, ZN727, ZN550, ZN793, ZN235, ZNF8, ZN724, ZN573, ZN577, ZN789, ZN718, ZN300, ZN383, ZN429, ZN677, ZN850, ZN454, ZN257, ZN264, ZFP82, ZFP14, ZN485, ZN737, ZNF44, ZN596, ZN565, ZN543, ZFP69, SUMO1, ZNF12, ZN169, ZN433, SUMO3, ZNF98, ZN175, ZN347, ZNF25, ZN519, Z585B, ZIM3, ZN517, ZN846, ZN230, ZNF66, ZFP1, ZN713, ZN816, ZN426, ZN674, ZN627, ZNF20, Z587B, ZN316, ZN233, ZN611, ZN556, ZN234, ZN560, ZNF77, ZN682, ZN614, ZN785, ZN445, ZFP30, ZN225, ZN551, ZN610, ZN528, ZN284, ZN418, MPP8, ZN490, ZN805, Z780B, ZN763, ZN285, ZNF85, ZN223, ZNF90, ZN557, ZN425, ZN229, ZN606, ZN155, ZN222, ZN442, ZNF91, ZN135, ZN778, RYBP, ZN534, ZN586, ZN567, ZN440, ZN583, ZN441, ZNF43, CBX5, ZN589, ZNF10, ZN563, ZN561, ZN136, ZN630, ZN527, ZN333, Z324B, ZN786, ZN709, ZN792, ZN599, ZN613, ZF69B, ZN799, ZN569, ZN564, ZN546, ZFP92, YAF2, ZN723, ZNF34, ZN439, ZFP57, ZNF19, ZN404, ZN274, CBX3, ZNF30, ZN250, ZN570, ZN675, ZN695, ZN548, ZN132, ZN738, ZN420, ZN626, ZN559, ZN460, ZN268, ZN304,

ZIM2, ZN605, ZN844, SUMO5, ZN101, ZN783, ZN417, ZN182, ZN823, ZN177, ZN197, ZN717, ZN669, ZN256, ZN251, CBX4, PCGF2, CDY2, CDYL2, HERC2, ZN562, ZN461, Z324A, ZN766, ID2, TOX, ZN274, SCMH1, ZN214, CBX7, ID1, CREM, SCX, ASCL1, ZN764, SCML2, TWST1, CREB1, TERF1, ID3, CBX8, CBX4, GSX1, NKX22, ATF1, TWST2, ZNF17, TOX3, TOX4, ZMYM3, I2BP1, RHXF1, SSX2, I2BPL, ZN680, CBX1, TRI68, HXA13, PHC3, TCF24, CBX3, HXB13, HEY1, PHC2, ZNF81, FIGLA, SAM11, KMT2B, HEY2, JDP2, HXC13, ASCL4, HHEX, HERC2, GSX2, BIN1, ETV7, ASCL3, PHC1, OTP, I2BP2, VGLL2, HXA11, PDLI4, ASCL2, CDX4, ZN860, LMBL4, PDIP3, NKX25, CEBPB, ISL1, CDX2, PROP1, SIN3B, SMBT1, HXC11, HXC10, PRS6A, VSX1, NKX23, MTG16, HMX3, HMX1, KIF22, CSTF2, CEBPE, DLX2, ZMYM3, PPARG, PRIC1, UNC4, BARX2, ALX3, TCF15, TERA, VSX2, HXD12, CDX1, TCF23, ALX1, HXA10, RX, CXXC5, SCML1, NFIL3, DLX6, MTG8, CBX8, CEBPD, SEC13, FIP1, ALX4, LHX3, PRIC2, MAGI3, NELL1, PRRX1, MTG8R, RAX2, DLX3, DLX1, NKX26, NAB1, SAMD7, PITX3, WDR5, MEOX2, NAB2, DHX8, FOXA2, CBX6, EMX2, CPSF6, HXC12, KDM4B, LMBL3, PHX2A, EMX1, NC2B, DLX4, SRY, ZN777, NELL1, ZN398, GATA3, BSH, SF3B4, TEAD1, TEAD3, RGAP1, PHF1, FOXA1, GATA2, FOXO3, ZN212, IRX4, ZBED6, LHX4, SIN3A, RBBP7, NKX61, TRI68, R51A1, MB3L1, DLX5, NOTC1, TERF2, ZN282, RGS12, ZN840, SPI2B, PAX7, NKX62, ASXL2, FOXO1, GATA3, GATA1, ZMYM5, ZN783, SPI2B, LRP1, MIXL1, SGT1, LMCD1, CEBPA, GATA2, SOX14, WTIP, PRP19, CBX6, NKX11, RBBP4, DMRT2, SMCA2 and fragments thereof.

[0011b] Also described herein is the use of an epigenetic editor in the manufacture of a medicament for a treatment of a disease in a subject, wherein the epigenetic editor comprises: (a) a first DNMT domain; (b) a DNA binding domain; and (c) a repressor domain, wherein the repressor domain is selected from the group consisting of: ZIM3, ZNF436, ZNF257, ZNF675, ZNF490, ZNF320, ZNF331, ZNF816, ZNF680, ZNF41, ZNF189, ZNF528, ZNF543, ZNF554, ZNF140, ZNF610, ZNF264, ZNF350, ZNF8, ZNF582, ZNF30, ZNF324, ZNF98, ZNF669, ZNF677, ZNF596, ZNF214, ZNF37A, ZNF34, ZNF250, ZNF547, ZNF273, ZNF354A, ZFP82, ZNF224, ZNF33A, ZNF45, ZNF175, ZNF595, ZNF184, ZNF419, ZFP28-1, ZFP28-2, ZNF18, ZNF213, ZNF394, ZFP1, ZFP14, ZNF416, ZNF557, ZNF566, ZNF729, ZIM2, ZNF254, ZNF764, ZNF785, ZNF10, CBX5, RYBP, YAF2, MGA, CBX1, SCMH1, MPP8, SUMO3, HERC2, BIN1, PCGF2, TOX, FOXA1, FOXA2, IRF2BP1, IRF2BP2, IRF2BPL IRF-2BP1_2 N-terminal domain, HOXA13, HOXB13, HOXC13, HOXA11, HOXC11, HOXC10, HOXA10, HOXB9, HOXA9, ZFP28, ZN334, ZN568, ZN37A, ZN181, ZN510, ZN862, ZN140, ZN208, ZN248, ZN571, ZN699, ZN726, ZIK1, ZNF2, Z705F, ZNF14, ZN471, ZN624, ZNF84, ZNF7, ZN891, ZN337, Z705G, ZN529, ZN729, ZN419, Z705A, ZNF45, ZN302, ZN486, ZN621, ZN688, ZN33A, ZN554, ZN878, ZN772, ZN224,

ZN184, ZN544, ZNF57, ZN283, ZN549, ZN211, ZN615, ZN253, ZN226, ZN730, Z585A, ZN732, ZN681, ZN667, ZN649, ZN470, ZN484, ZN431, ZN382, ZN254, ZN124, ZN607, ZN317, ZN620, ZN141, ZN584, ZN540, ZN75D, ZN555, ZN658, ZN684, RBAK, ZN829, ZN582, ZN112, ZN716, HKR1, ZN350, ZN480, ZN416, ZNF92, ZN100, ZN736, ZNF74, CBX1, ZN443, ZN195, ZN530, ZN782, ZN791, ZN331, Z354C, ZN157, ZN727, ZN550, ZN793, ZN235, ZNF8, ZN724, ZN573, ZN577, ZN789, ZN718, ZN300, ZN383, ZN429, ZN677, ZN850, ZN454, ZN257, ZN264, ZFP82, ZFP14, ZN485, ZN737, ZNF44, ZN596, ZN565, ZN543, ZFP69, SUMO1, ZNF12, ZN169, ZN433, SUMO3, ZNF98, ZN175, ZN347, ZNF25, ZN519, Z585B, ZIM3, ZN517, ZN846, ZN230, ZNF66, ZFP1, ZN713, ZN816, ZN426, ZN674, ZN627, ZNF20, Z587B, ZN316, ZN233, ZN611, ZN556, ZN234, ZN560, ZNF77, ZN682, ZN614, ZN785, ZN445, ZFP30, ZN225, ZN551, ZN610, ZN528, ZN284, ZN418, MPP8, ZN490, ZN805, Z780B, ZN763, ZN285, ZNF85, ZN223, ZNF90, ZN557, ZN425, ZN229, ZN606, ZN155, ZN222, ZN442, ZNF91, ZN135, ZN778, RYBP, ZN534, ZN586, ZN567, ZN440, ZN583, ZN441, ZNF43, CBX5, ZN589, ZNF10, ZN563, ZN561, ZN136, ZN630, ZN527, ZN333, Z324B, ZN786, ZN709, ZN792, ZN599, ZN613, ZF69B, ZN799, ZN569, ZN564, ZN546, ZFP92, YAF2, ZN723, ZNF34, ZN439, ZFP57, ZNF19, ZN404, ZN274, CBX3, ZNF30, ZN250, ZN570, ZN675, ZN695, ZN548, ZN132, ZN738, ZN420, ZN626, ZN559, ZN460, ZN268, ZN304, ZIM2, ZN605, ZN844, SUMO5, ZN101, ZN783, ZN417, ZN182, ZN823, ZN177, ZN197, ZN717, ZN669, ZN256, ZN251, CBX4, PCGF2, CDY2, CDYL2, HERC2, ZN562, ZN461, Z324A, ZN766, ID2, TOX, ZN274, SCM1, ZN214, CBX7, ID1, CREM, SCX, ASCL1, ZN764, SCML2, TWST1, CREB1, TERF1, ID3, CBX8, CBX4, GSX1, NKX22, ATF1, TWST2, ZNF17, TOX3, TOX4, ZMYM3, I2BP1, RHXF1, SSX2, I2BPL, ZN680, CBX1, TRI68, HXA13, PHC3, TCF24, CBX3, HXB13, HEY1, PHC2, ZNF81, FIGLA, SAM11, KMT2B, HEY2, JDP2, HXC13, ASCL4, HHEX, HERC2, GSX2, BIN1, ETV7, ASCL3, PHC1, OTP, I2BP2, VGLL2, HXA11, PDLI4, ASCL2, CDX4, ZN860, LMBL4, PDIP3, NKX25, CEBPB, ISL1, CDX2, PROP1, SIN3B, SMBT1, HXC11, HXC10, PRS6A, VSX1, NKX23, MTG16, HMX3, HMX1, KIF22, CSTF2, CEBPE, DLX2, ZMYM3, PPARG, PRIC1, UNC4, BARX2, ALX3, TCF15, TERA, VSX2, HXD12, CDX1, TCF23, ALX1, HXA10, RX, CXXC5, SCML1, NFIL3, DLX6, MTG8, CBX8, CEBPD, SEC13, FIP1, ALX4, LHX3, PRIC2, MAGI3, NELL1, PRRX1, MTG8R, RAX2, DLX3, DLX1, NKX26, NAB1, SAMD7, PITX3, WDR5, MEOX2, NAB2, DHX8, FOXA2, CBX6, EMX2, CPSF6, HXC12, KDM4B, LMBL3, PHX2A, EMX1, NC2B, DLX4, SRY, ZN777, NELL1, ZN398, GATA3, BSH, SF3B4, TEAD1, TEAD3, RGAP1, PHF1, FOXA1, GATA2, FOXO3, ZN212, IRX4, ZBED6, LHX4, SIN3A, RBBP7, NKX61, TRI68, R51A1, MB3L1, DLX5, NOTC1, TERF2, ZN282, RGS12, ZN840, SPI2B, PAX7, NKX62, ASXL2, FOXO1, GATA3, GATA1, ZMYM5, ZN783,

SPI2B, LRP1, MIXL1, SGT1, LMCD1, CEBPA, GATA2, SOX14, WTIP, PRP19, CBX6, NKX11, RBBP4, DMRT2, SMCA2 and fragments thereof.

[0011c] Also described herein is an epigenetic editor as described herein for use in therapy.

[0012] In some embodiments, at least one of the repressor domains is selected from the group consisting of: SEQ ID NO: 67-595. In some embodiments, the DNA binding domain binds to a target sequence in a target chromosome comprising a target gene. In some embodiments, the repressor domain specifically binds to an epigenetic effector protein in a cell comprising a target gene and directs the epigenetic editor to the target gene to effect an epigenetic modification in a nucleotide in the target gene or a histone bound to the target gene. In some embodiments, the repressor domains is selected from the group consisting of: ZIM3, ZNF264, ZN577, ZN793, ZFP28, ZN627, RYBP, TOX, TOX3, TOX4, I2BP1, SCMH1, SCML2, CDYL2, CBX8, CBX5, and CBX1, and fragments thereof.

[0013] In some embodiments, the fusion protein further comprises a second DNMT domain. In some embodiments, the first DNMT domain is selected from the group consisting of a DNMT3A domain, a DNMT3B domain, a DNMT3C domain, and a DNMT3L domain. In some embodiments, the first DNMT domain is the DNMT3A domain. In some embodiments, the first DNMT domain is the DNMT3L domain. In some embodiments, the first DNMT domain is a human DNMT domain. In some embodiments, the first human DNMT domain is a human DNMT3A domain. In some embodiments, the human DNMT domain is a human DNMT3L domain. In some embodiments, the first DNMT domain is a mouse DNMT domain. In some embodiments, the mouse DNMT domain is a mouse DNMT3A domain. In some embodiments, the mouse DNMT domain is a mouse DNMT3L domain. In some embodiments, the first DNMT domain is a DNMT3A domain and the second DNMT domain is a DNMT3L domain. In some embodiments, the first DNMT domain is a human DNMT3A domain and the second DNMT domain is a human DNMT3L domain. In some embodiments, the first DNMT domain is a human DNMT3A domain and the second DNMT domain is a mouse DNMT3L domain. In some embodiments, the first DNMT domain is a mouse DNMT3A domain and the second DNMT domain is a human DNMT3L domain. In some embodiments, the first DNMT domain is a mouse DNMT3A domain and the second DNMT domain is a mouse DNMT3L domain. In some embodiments, the first DNMT domain is a catalytic portion of the DNMT domain. In some embodiments, the second DNMT domain is a catalytic portion of a DNMT domain. In some embodiments, the first DNMT domain and the second DNMT domain are selected from the group consisting of SEQ ID NO: 32-66.

[0014] In some embodiments, the DNA binding domain comprises a zinc finger motif. In some embodiments, the DNA binding domain comprises a zinc finger array. In some embodiments,

119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, or 150 base pairs of a guide RNA are chemically modified. Chemical modifications can be made in the protospacer region, the tracr RNA, the crRNA, the stem loop, or any combination thereof.

Zinc finger proteins

[0163] In some embodiments, an epigenetic editor described herein comprises a nucleic acid binding domain comprising a zinc finger domain.

[0164] Zinc finger proteins are DNA-binding proteins that contain one or more zinc fingers. In some embodiments, a zinc finger (ZF) comprises a relatively small polypeptide domain comprising approximately 30 amino acids. A zinc finger may comprise an α -helix adjacent an antiparallel β -sheet (known as a $\beta\beta\alpha$ -fold) which may co-ordinate with a zinc ion between four Cys and/or His residues, as described further below. In some embodiments, a ZF domain recognizes and binds to a nucleic acid triplet, or an overlapping quadruplet, in a double-stranded DNA target sequence. In certain embodiments, ZFs may also bind RNA and proteins.

[0165] As used herein, the term “zinc finger” (ZF) or “zinc finger motif” (ZF motif) refers to an individual “finger”, which comprises a beta-beta-alpha ($\beta\beta\alpha$)-protein fold stabilized by a zinc ion as described elsewhere herein. In some embodiments, each finger includes approximately 30 amino acids. In some embodiments, ZF proteins or ZF protein domains are protein motifs that contain multiple fingers or finger-like protrusions that make tandem contacts with their target molecule. For example, a ZF finger may bind a triplet or (overlapping) quadruplet nucleotide sequence. Accordingly, a tandem array of ZF fingers may be designed for ZF proteins that do not naturally exist to bind desired targets.

[0166] Zinc finger proteins are widespread in eukaryotic cells. An exemplary motif characterizing one class of these proteins (C2H2 class) is -Cys-(X)₂₋₄-Cys-(X)₁₂-His-(X)₃₋₅His (SEQ ID NO: 1158), where X is any amino acid. A single finger domain may be about 30 amino acids in length. In some embodiments, a single finger comprises an alpha helix containing the two invariant histidine residues co-ordinated through zinc with the two cysteines of a single beta turn.

[0167] In some embodiments, amino acid sequence of a zinc finger protein, e.g. a Zif268 protein may be altered by making amino acid substitutions at the helix positions (e.g., positions -1, 2, 3 and 6 of Zif268) on a zinc finger recognition helix. For example, modified zinc fingers with non-naturally occurring DNA recognition specificity may be generated by phage display and combinatorial libraries with randomized side-chains in either the first or middle finger of a Zif268 and then isolated with an altered Zif268 binding site in which the appropriate DNA sub-site was replaced by an altered DNA triplet.

[0180] In some embodiments, a zinc finger or zinc finger array targeting a specific DNA sequence is designed with a modular assembly approach. For example, two or more pre-selected zinc fingers may be fused in a tandem fashion.

[0181] In some embodiments, a zinc finger array comprises multiple zinc fingers fused via peptide bonds. In some embodiments, a zinc finger array comprises multiple zinc fingers, one or more of which connected by peptide linkers. For example, zinc fingers in a multiple finger array can be linked by peptide linkers of 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 or more amino acids in length. In some embodiments, zinc fingers in a multiple finger array are linked by peptide linkers of 5 amino acids in length. In some embodiments, zinc fingers in a multiple finger array are linked by peptide linkers of 6 amino acids in length. In some embodiments, the two-finger units bind adjacent bases and are connected by a linker with the sequence TGSQKP (SEQ ID NO.: 704). In some embodiments the two-finger units bind sequences that are separated by 1 or 2 nucleotides and the two-finger units are separated by a linker with the sequence TGGGGSQKP (SEQ ID NO.: 705).

[0182] In some embodiments, ZF-containing proteins may contain ZF arrays of 2 or more ZF motifs, which may be directly adjacent one another (i.e. separated by a short (canonical) linker sequence), or may be separated by longer, flexible or structured polypeptide sequences. In some embodiments, directly adjacent fingers bind to contiguous nucleic acid sequences, i.e. to adjacent trinucleotides/triplets. In some embodiments, adjacent fingers cross-bind between each other's respective target triplets, which may help to strengthen or enhance the recognition of the target sequence, and leads to the binding of overlapping quadruplet sequences. In some embodiments, distant ZF domains within the same protein may recognize (or bind to) non-contiguous nucleic acid sequences or even to different molecules (e.g. protein rather than nucleic acid).

[0183] In some embodiments, an epigenetic editor comprises zinc fingers comprising more than 3-fingers. In some embodiments, an epigenetic editor comprises at least 6 zinc fingers in the DNA binding domain. In some embodiments, an epigenetic editor comprises 6 zinc fingers in the DNA binding domain that binds to a 18bp target sequence. In some embodiments, the 18bp target sequence is unique in the human genome. In some embodiments, an epigenetic editor comprises zinc fingers comprising at least 7, 8, 9, 10, 11, 12, 13, 14, 15 or more zinc fingers. In some embodiments, the strong affinity of three-finger proteins would allow subsets of the longer array to bind DNA and therefore decrease specificity. Without wishing to be bound by any theory, zinc finger proteins comprising multiple two-finger units or three-finger units joined by extended linkers may confer higher DNA binding specificity as compared to fewer fingers, or

epigenetic modifications to DNA sequences, or associated histones in a target gene. In some embodiments, an epigenetic editor described herein comprises a zinc finger array having specificity for a target DNA sequence. In some embodiments a zinc finger array may have the sequence: SRPGERPFQCRICMRNFSNNNNNNNNHTRTHTGKEKPFQCRICMRNFSNNNNNNNNHLRTH[linker]FQCRICMRNFSNNNNNNNNHTRTHTGKEKPFQCRICMRNFSNNNNNNNNHLRTH[linker]FQCRICMRNFSNNNNNNNNHTRTHTGKEKPFQCRICMRNFSNNNNNNNNHLRTHLRGS (SEQ ID NO.: 1157).

Where NNNNNNN represents the amino acids of the zinc finger recognition helix, which confer DNA-binding specificity upon the zinc finger. And [linker] represents a linker sequence. In some embodiments the linker sequence may be TGSQKP (SEQ ID NO.: 704). In some embodiments the linker sequence may be TGGGGSQKP (SEQ ID NO.: 705). In some embodiments, the two linkers of the zinc finger array are the same. In some embodiments, the two linkers of the zinc finger array are different.

[0186] In some embodiments, the programmable DNA binding protein comprises an argonaute protein. One example of such a nucleic acid programmable DNA binding protein is an Argonaute protein from *Natronobacterium gregoryi* (NgAgo). NgAgo is a ssDNA-guided endonuclease. NgAgo binds 5' phosphorylated ssDNA of -24 nucleotides (gDNA) to guide it to its target site and will make DNA double-strand breaks at the gDNA site. In contrast to Cas9, the NgAgo-gDNA system does not require a protospacer-adjacent motif (PAM). Using a nuclease inactive NgAgo (dNgAgo) can greatly expand the bases that may be targeted. The characterization and use of NgAgo have been described in Gao et al., *Nat Biotechnol.*, 2016 Jul;34(7):768-73. PubMed PMID: 27136078; Swarts et al., *Nature*. 507(7491) (2014):258-61; and Swarts et al., *Nucleic Acids Res.* 43(10) (2015):5120-9, each of which is incorporated herein by reference.

[0187] In some embodiments, the nucleic acid binding domain comprises a virus derived RNA-binding domain guided by an RNA sequence to bind the target gene. In some embodiments, the nucleic acid binding domain comprises a K Homology (KH) domain, a MS2 coat protein domain, a PP7 coat protein domain, a SfMu Com coat protein domain, a sterile alpha motif, a telomerase Ku binding motif and Ku protein, a telomerase Sm7 binding motif and Sm7 protein, or any other RNA recognition motifs.

[0188] In some embodiments, the nucleic acid binding domain comprises an inactivated nuclease, for example, an inactivated meganuclease. Additional non-limiting examples of DNA binding domains include tetracycline-controlled repressor (tetR) DNA binding domain, leucine

Protein Name	Species	Target	Protein Sequence
CMT3	Arabidopsis	5MC	SEQ ID NO.: 59
Rid	Neurospora	5MC	SEQ ID NO.: 60
hsdM gene	bacteria (E.coli, strain 12)	m6A	SEQ ID NO.: 61
hsdS gene	bacteria (E.coli, strain 12)	m6A	SEQ ID NO.: 62
M.TaqI	bacteria; Thermus aquaticus	m6A	SEQ ID NO.: 63
M.EcoDam	E. coli	m6A	SEQ ID NO.: 64
M.CcrMI	Caulobacter crescentus	m6A	SEQ ID NO.: 65
CamA	Clostridioides difficile	m6A	SEQ ID NO.: 66

[0335] In some embodiments, the effector domain recruits one or more protein domains that repress expression of the target gene. In some embodiments, the effector domain interacts with a scaffold protein domain that recruits one or more protein domains that repress expression of the target gene. For example, the effector domain may recruit or interact with a scaffold protein domain that recruits a PRMT protein, a HDAC protein, a SETDB1 protein, or a NuRD protein domain. In some embodiments, the effector domain comprises a Krüppel associated box (KRAB) repression domain; a Repressor Element Silencing Transcription Factor (REST) repression domain, KRAB-associated protein 1 (KAP1) domain, a MAD domain, a FKHR (forkhead in rhabdosarcoma gene) repressor domain, AegR-1 (early growth response gene product-1) repressor domain, a ets2 repressor factor repressor domain (ERD), a MAD smSIN3 interaction domain (SID), a WRPW motif (SEQ ID NO: 1162) of the hairy-related basic helix-loop-helix (BhlH) repressor proteins; an HP1 alpha chromo-shadow repression domain, or any combination thereof. In some embodiments, the effector domain comprises a KRAB domain. In some embodiments, the effector domain comprises a Tripartite motif containing 28 (TRIM28, TIF1-beta, or KAP1) protein.

[0336] In some embodiments, an effector domain comprises a protein domain that represses expression of the target gene. For example, the effector domain may comprise a functional domain derived from a zinc finger repressor protein. In some embodiments, the effector domain comprises a functional repression domain derived from a KOX1/ZNF10 domain, a KOX8/ZNF708 domain, a ZNF43 domain, a ZNF184 domain, a ZNF91 KRAB domain, a HPF4 domain, a HTF10 domain or a HTF34 domain or any combination thereof. In some embodiments, the effector domain comprises a functional repression domain derived from a ZIM3 protein domain, a ZNF436 domain, a ZNF257 domain, a ZNF675 domain, a ZNF490 domain, a ZNF320 domain, a ZNF331 domain, a ZNF816 domain, a ZNF680 domain, a ZNF41 domain, a ZNF189 domain, a ZNF528 domain, a ZNF543 domain, a ZNF554

Protein	Species	Protein Sequence
TET2	Human	SEQ ID NO.: 600
TET3	Human	SEQ ID NO.: 601
TDG	Human	SEQ ID NO.: 602
ROS1	Arabidopsis	SEQ ID NO.: 603
DME	Arabidopsis	SEQ ID NO.: 604
DML2	Arabidopsis	SEQ ID NO.: 605
DML3	Arabidopsis	SEQ ID NO.: 606

[0353] The effector domain may activate expression of the target gene. In some embodiments, the effector domain comprises a protein domain that recruits one or more transcription activator domains. In some embodiments, the effector domain comprises a protein domain that recruits one or more transcription factors. In some embodiments, the effector domain comprises a transcription activator or a transcription factor domain. In some embodiments, the effector domain comprises a Herpes Simplex Virus Protein 16 (VP16) activation domain. In some embodiments, the effector domain comprises an activation domain comprising a tandem repeat of multiple VP16 activation domains. In some embodiments, the effector domain comprises four tandem copies of VP16, a VP64 activation domain. In some embodiments, the effector domain comprises a p65 activation domain of NFκB; an Epstein-Barr virus R transactivator (Rta) activation domain. In some embodiments, the effector domain comprises a fusion of multiple activators, e.g., a tripartite activator of the VP64, the p65, and the Rta activation domains, (a VPR activation domain).

[0354] In some embodiments, an effector domain comprises a transactivation domain of FOXO protein family (FOXO-TAD), a LMSTEN motif domain (LMSTEN) ("LMSTEN" disclosed as SEQ ID NO: 1163), a Transducer of regulated CREB activity C terminus domain (TORC_C), a QLQ domain, a Nuclear receptor coactivator domain (Nuc_rec_co-act), an Autophagy receptor zinc finger-C2H2 domain (Zn-C2H2-12), an Anaphase-promoting complex subunit 16 (ANAPC16), a Dpy-30 domain, a ANC1 homology domain (AHD), a Signal transducer and activator of transcription 2 C terminal (STAT2_C), a I-kappa-kinase-beta NEMO binding domain (IKKbetaNEMObind), a Early growth response N-terminal domain (DUF3446), a TFIIE beta subunit core domain (TFIIE_beta), a N-terminal domain of DPF2/REQ (Requiem_N), a LNR domain (Notch), a Atypical Arm repeat (Arm_3), a Protein kinase C terminal domain (pKinase_C), WW domain, a SH3 domain (SH3_1), a Myb-like DNA-binding domain, a WD domain G-beta repeat (WD40), a PHD-finger (PHD), a RNA recognition motif domain (RRM_1), a GATA zinc finger domain (GATA), a Vps4 C terminal oligomerization domain (Vps4_C), or in any combination thereof. In some embodiments, the

effector domain comprises a KRAB domain that activates expression of a target gene. For example the KRAB domain may be a ZNF473 KRAB domain, a ZFP28 KRAB domain, a ZNF496 KRAB domain, or a ZNF597 KRAB domain or any combination thereof. In some embodiments, the KRAB domain comprises a 41-amino-acid ZNF473 KRAB domain (41 AA ZNF473). In some embodiments, the effector domain comprises a FOXO-TAD domain, a LMSTEN domain ("LMSTEN" disclosed as SEQ ID NO: 1163), or a TORC_C domain. In some embodiment, the protein domain comprises a RNA polymerase II transcription mediator complex subunit 9 (Med9), TFIIE beta subunit core domain (TFIIE β), nuclear receptor coactivator 3 domain (NCOA3), transactivation domain of FOXO protein family (FOXO-TAD), LMSTEN motif domain ("LMSTEN" disclosed as SEQ ID NO: 1163), early growth response N-terminal domain (DUF3446), QLQ domain, or Dpy-30 motif domain or any combination thereof. In some embodiment, the effector domain comprises a ZNF473 KRAB domain or a Med9 domain.

[0355] Exemplary domains that can activate or increase target gene expression are provided in Table 5 below.

Table 5. Exemplary protein domains that may be used in epigenetic effector domains to increase target gene expression

Protein	Species	Protein Sequence
VP16	Herpes simplex virus type 1 (strain 17)	SEQ ID NO.: 607
VP64	Herpes simplex virus type 1	SEQ ID NO.: 608
VP160	Herpes simplex virus type 1	SEQ ID NO.: 609
HIF1alpha	Human	SEQ ID NO.: 610
CITED2	Human	SEQ ID NO.: 611
Stat3	Human	SEQ ID NO.: 612
p65	Human	SEQ ID NO.: 613
p53	Human	SEQ ID NO.: 614
ZNF473	Human	SEQ ID NO.: 615
FOXO1	Human	SEQ ID NO.: 616
Myb	Human	SEQ ID NO.: 617
CRTC1	Human	SEQ ID NO.: 618
Med9	Human	SEQ ID NO.: 619
EGR3	Human	SEQ ID NO.: 620
SMARCA2	Human	SEQ ID NO.: 621
Dpy-30	Human	SEQ ID NO.: 622
NCOA3	Human	SEQ ID NO.: 623
ZFP28	Human	SEQ ID NO.: 624
ZNF496	Human	SEQ ID NO.: 625

embodiments, the linker is 64 amino acids in length. In some embodiments, the linker comprises the amino acid sequence SEQ ID NO.: 687.

[0377] In some embodiments, the linker is 92 amino acids in length. In some embodiments, the linker comprises the amino acid sequence SEQ ID NO.: 688.

[0378] Various linker lengths and flexibilities between a effector domain (e.g., a repressor domain) and a DNA binding protein (e.g., a Cas9 domain), between a effector domain and a second effector domain, or between any two components of an epigenetic editor can be employed (e.g., ranging from very flexible linkers of the form (GGGGS)_n (SEQ ID NO: 1159), (GGGGS)_n (SEQ ID NO: 1159), and (G)_n to more rigid linkers of the form (EAAAK)_n (SEQ ID NO: 1160), (SGGS)_n (SEQ ID NO: 1161), and (XP)_n) in order to achieve the optimal length for effector domain activity for the specific application. In some embodiments, n is any integer between 3 and 30. In some embodiments, n is 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, or 15. In some embodiments, the linker comprises a (GGS)_n motif, wherein n is 1, 3, or 7 (SEQ ID NO: 1164).

[0379] In some embodiments, a linker in an epigenetic editor comprises a nuclear localization signal, for example, of peptide sequence SEQ ID NO.: 689-694. In some embodiments, a linker in an epigenetic editor comprises a cleavable peptide, e.g., a T2A peptide, a p2A peptide, or a furin/p2A peptide. In some embodiments, a linker in an epigenetic editor comprises an expression tag, e.g. a detectable tag such as a green fluorescence protein.

[0380] In some embodiments, a linker comprises a nucleic acid. For example, one or more linkers of an epigenetic editor may include a nucleic acid that is capable of binding to, interacting with, associating with, or forming a complex with a polypeptide. In some embodiments, the nucleic acid linker may be a RNA linker capable of binding to and/or interacting with a RNA binding protein domain, e.g. a phase derived RNA binding domain. In some embodiments, the nucleic acid linker may be fused to a guide polynucleotide capable of binding to a Cas protein of an epigenetic editor. In some embodiments, the nucleic acid linker comprises a K homology (KH) domain binding sequence, a MS2 coat protein binding sequence, a PP7 coat protein binding sequence, a SfMu COM coat protein binding sequence, a telomerase Ku binding motif binding sequence, a sm7 protein binding sequence, or other RNA recognition motif binding sequence thereof.

[0381] In some embodiments, a linker comprises an affinity domain that specifically binds a component of an epigenetic effector. For example, an epigenetic effector may comprise a programmable DNA binding domain, a linker comprising an affinity domain having specific binding affinity to an epigenetic effector domain. The affinity domain may comprise an antibody, a single chain antibody, a nanobody, and antigen binding sequence, an antibody, a

GGTGAGCAAGGGCGCCGAGCTGTTCACCGGCATCGTGCCCATCCTGATCGAGCTGAA
TGGCGATGTGAATGGCCACAAGTTCAGCGTGAGCGGCGAGGGCGAGGGCGATGCCACC
TACGGCAAGCTGACCCTGAAGTTCATCTGCACCACCGGCAAGCTGCCTGTGCCCTGGCC
C

Table 7: Target Site Table

Target Site	Sequence
GFP-1	SEQ ID NO.: 696
GFP-2	SEQ ID NO.: 697
GFP-3	SEQ ID NO.: 698
GFP-4	SEQ ID NO.: 699
GFP-5	SEQ ID NO.: 700
GFP-6	SEQ ID NO.: 701
GFP-7	SEQ ID NO.: 702

Zinc finger sequences were designed for binding of the above described target site. Exemplary Zinc finger sequences are as follows:

SRPGERPFQCRICMRNFS[F1]HTRTHTGEKPFQCRICMRNFS[F2]HLRTH[linker1]FQCRICMRNFS[F3]HTRTHTGEKPFQCRICMRNFS[F4]HLRTH[linker2]FQCRICMRNFS[F5]HTRTHTGEKPFQCRICMRNFS[F6]HLRTHLRGS (SEQ ID NO.: 703)

Where zinc finger proteins for a given target site have the following linkers:

Table 8: Linkers for a Given Target Site

Target Site	Sequence	Linker 1	Linker 2
GFP-1	SEQ ID NO.: 696	SEQ ID NO.: 704	SEQ ID NO.: 705
GFP-2	SEQ ID NO.: 697	SEQ ID NO.: 705	SEQ ID NO.: 704
GFP-3	SEQ ID NO.: 698	SEQ ID NO.: 704	SEQ ID NO.: 705
GFP-4	SEQ ID NO.: 699	SEQ ID NO.: 704	SEQ ID NO.: 704
GFP-5	SEQ ID NO.: 700	SEQ ID NO.: 704	SEQ ID NO.: 704
GFP-6	SEQ ID NO.: 701	SEQ ID NO.: 704	SEQ ID NO.: 704
GFP-7	SEQ ID NO.: 702	SEQ ID NO.: 704	SEQ ID NO.: 705

and where recognition helices for a given target site may be selected from the following SEQ ID NO.: 716-961:

Table 9: Recognition Helices for a Given Target Site

Target Site	Zinc Finger Protein Name	F1	F2	F3	F4	F5	F6
GFP-1	GFP1-ZF1	HKSSLTR (SEQ ID NO: 716)	RTEHLAR (SEQ ID NO: 757)	QSAHLKR (SEQ ID NO: 798)	RTEHLAR (SEQ ID NO: 839)	HKSSLTR (SEQ ID NO: 880)	RPESLAP (SEQ ID NO: 921)

Target Site	Zinc Finger Protein Name	F1	F2	F3	F4	F5	F6
GFP-1	GFP1-ZF2	HKSSLTR (SEQ ID NO: 717)	RTEHLAR (SEQ ID NO: 758)	TSAHLAR (SEQ ID NO: 799)	RREHLVR (SEQ ID NO: 840)	HKSSLTR (SEQ ID NO: 881)	RPESLAP (SEQ ID NO: 922)
	GFP1-ZF3	IKAILTR (SEQ ID NO: 718)	RREHLVR (SEQ ID NO: 759)	QSAHLKR (SEQ ID NO: 800)	RTEHLAR (SEQ ID NO: 841)	HKSSLTR (SEQ ID NO: 882)	RPESLAP (SEQ ID NO: 923)

Target Site	Zinc Finger Protein Name	F1	F2	F3	F4	F5	F6
	GFP1-ZF4	IKAILTR (SEQ ID NO: 719)	RREHLVR (SEQ ID NO: 760)	TSAHLAR (SEQ ID NO: 801)	RREHLVR (SEQ ID NO: 842)	HKSSLTR (SEQ ID NO: 883)	RPESLAP (SEQ ID NO: 924)
GFP-2	GFP2-ZF1	TSTLLNR (SEQ ID NO: 720)	QQTNLTR (SEQ ID NO: 761)	DEANLRR (SEQ ID NO: 802)	QSAHLKR (SEQ ID NO: 843)	IPNKLAR (SEQ ID NO: 884)	RREVLEN (SEQ ID NO: 925)
	GFP2-ZF2	TSTLLNR (SEQ ID NO: 721)	QQTNLTR (SEQ ID NO: 762)	DEANLRR (SEQ ID NO: 803)	QSAHLKR (SEQ ID NO: 844)	EAHHLR (SEQ ID NO: 885)	RKDALHV (SEQ ID NO: 926)
	GFP2-ZF3	TSTLLNR (SEQ ID NO: 722)	QQTNLTR (SEQ ID NO: 763)	DRGNLTR (SEQ ID NO: 804)	QGGHLKR (SEQ ID NO: 845)	IPNKLAR (SEQ ID NO: 886)	RREVLEN (SEQ ID NO: 927)
	GFP2-ZF4	TSTLLNR (SEQ ID NO: 723)	QQTNLTR (SEQ ID NO: 764)	DRGNLTR (SEQ ID NO: 805)	QGGHLKR (SEQ ID NO: 846)	EAHHLR (SEQ ID NO: 887)	RKDALHV (SEQ ID NO: 928)
	GFP2-ZF5	HKSSLTR (SEQ ID NO: 724)	QTNNLGR (SEQ ID NO: 765)	DEANLRR (SEQ ID NO: 806)	QSAHLKR (SEQ ID NO: 847)	IPNKLAR (SEQ ID NO: 888)	RREVLEN (SEQ ID NO: 929)
	GFP2-ZF6	HKSSLTR (SEQ ID NO: 725)	QTNNLGR (SEQ ID NO: 766)	DEANLRR (SEQ ID NO: 807)	QSAHLKR (SEQ ID NO: 848)	EAHHLR (SEQ ID NO: 889)	RKDALHV (SEQ ID NO: 930)
	GFP2-ZF7	HKSSLTR (SEQ ID NO: 726)	QTNNLGR (SEQ ID NO: 767)	DRGNLTR (SEQ ID NO: 808)	QGGHLKR (SEQ ID NO: 849)	IPNKLAR (SEQ ID NO: 890)	RREVLEN (SEQ ID NO: 931)
	GFP2-ZF8	HKSSLTR (SEQ ID NO: 727)	QTNNLGR (SEQ ID NO: 768)	DRGNLTR (SEQ ID NO: 809)	QGGHLKR (SEQ ID NO: 850)	EAHHLR (SEQ ID NO: 891)	RKDALHV (SEQ ID NO: 932)
GFP-3	GFP3-ZF1	QQTNLTR (SEQ ID NO: 728)	IRHHLKR (SEQ ID NO: 769)	DSSVLRR (SEQ ID NO: 810)	LSTNLTR (SEQ ID NO: 851)	QSTTLKR (SEQ ID NO: 892)	RSDHLSL (SEQ ID NO: 933)
	GFP3-ZF2	QQTNLTR (SEQ ID NO: 729)	IRHHLKR (SEQ ID NO: 770)	DGSTLNR (SEQ ID NO: 811)	VRHNLTR (SEQ ID NO: 852)	QSTTLKR (SEQ ID NO: 893)	RSDHLSL (SEQ ID NO: 934)
	GFP3-ZF3	RKPNNLR (SEQ ID NO: 730)	EAHHLR (SEQ ID NO: 771)	DSSVLRR (SEQ ID NO: 812)	LSTNLTR (SEQ ID NO: 853)	QSTTLKR (SEQ ID NO: 894)	RSDHLSL (SEQ ID NO: 935)
	GFP3-ZF4	RKPNNLR (SEQ ID NO: 731)	EAHHLR (SEQ ID NO: 772)	DGSTLNR (SEQ ID NO: 813)	VRHNLTR (SEQ ID NO: 854)	QSTTLKR (SEQ ID NO: 895)	RSDHLSL (SEQ ID NO: 936)
GFP-4	GFP4-ZF1	VRHNLTR (SEQ ID NO: 732)	ESGHLKR (SEQ ID NO: 773)	RQDNLGR (SEQ ID NO: 814)	KNHSLNN (SEQ ID NO: 855)	RQDNLGR (SEQ ID NO: 896)	KNHSLNN (SEQ ID NO: 937)

Target Site	Zinc Finger Protein Name	F1	F2	F3	F4	F5	F6
GFP-5	GFP5-ZF1	DSSVLRR (SEQ ID NO: 733)	LSTNLTR (SEQ ID NO: 774)	LKEHLTR (SEQ ID NO: 815)	RVDNLPR (SEQ ID NO: 856)	LKEHLTR (SEQ ID NO: 897)	RVDNLPR (SEQ ID NO: 938)
	GFP5-ZF2	DSSVLRR (SEQ ID NO: 734)	LSTNLTR (SEQ ID NO: 775)	LKEHLTR (SEQ ID NO: 816)	RVDNLPR (SEQ ID NO: 857)	SPSKLVR (SEQ ID NO: 898)	RQDNLGR (SEQ ID NO: 939)
	GFP5-ZF3	DSSVLRR (SEQ ID NO: 735)	LSTNLTR (SEQ ID NO: 776)	SPSKLVR (SEQ ID NO: 817)	RQDNLGR (SEQ ID NO: 858)	LKEHLTR (SEQ ID NO: 899)	RVDNLPR (SEQ ID NO: 940)
	GFP5-ZF4	DSSVLRR (SEQ ID NO: 736)	LSTNLTR (SEQ ID NO: 777)	SPSKLVR (SEQ ID NO: 818)	RQDNLGR (SEQ ID NO: 859)	SPSKLVR (SEQ ID NO: 900)	RQDNLGR (SEQ ID NO: 941)
	GFP5-ZF5	DGSTLNR (SEQ ID NO: 737)	VRHNLTR (SEQ ID NO: 778)	LKEHLTR (SEQ ID NO: 819)	RVDNLPR (SEQ ID NO: 860)	LKEHLTR (SEQ ID NO: 901)	RVDNLPR (SEQ ID NO: 942)
	GFP5-ZF6	DGSTLNR (SEQ ID NO: 738)	VRHNLTR (SEQ ID NO: 779)	LKEHLTR (SEQ ID NO: 820)	RVDNLPR (SEQ ID NO: 861)	SPSKLVR (SEQ ID NO: 902)	RQDNLGR (SEQ ID NO: 943)
	GFP5-ZF7	DGSTLNR (SEQ ID NO: 739)	VRHNLTR (SEQ ID NO: 780)	SPSKLVR (SEQ ID NO: 821)	RQDNLGR (SEQ ID NO: 862)	LKEHLTR (SEQ ID NO: 903)	RVDNLPR (SEQ ID NO: 944)
	GFP5-ZF8	DGSTLNR (SEQ ID NO: 740)	VRHNLTR (SEQ ID NO: 781)	SPSKLVR (SEQ ID NO: 822)	RQDNLGR (SEQ ID NO: 863)	SPSKLVR (SEQ ID NO: 904)	RQDNLGR (SEQ ID NO: 945)
GFP-6	GFP6-ZF1	RKPILLR (SEQ ID NO: 741)	VRHNLTR (SEQ ID NO: 782)	DKAQLGR (SEQ ID NO: 823)	EAHHLR (SEQ ID NO: 864)	RQSRLQR (SEQ ID NO: 905)	KGDHLRR (SEQ ID NO: 946)
	GFP6-ZF2	RKPILLR (SEQ ID NO: 742)	VRHNLTR (SEQ ID NO: 783)	DKAQLGR (SEQ ID NO: 824)	EAHHLR (SEQ ID NO: 865)	EAHHLR (SEQ ID NO: 906)	DPSNLR (SEQ ID NO: 947)
	GFP6-ZF3	RKPILLR (SEQ ID NO: 743)	VRHNLTR (SEQ ID NO: 784)	QSTTLKR (SEQ ID NO: 825)	VDHHLR (SEQ ID NO: 866)	RQSRLQR (SEQ ID NO: 907)	KGDHLRR (SEQ ID NO: 948)
	GFP6-ZF4	RKPILLR (SEQ ID NO: 744)	VRHNLTR (SEQ ID NO: 785)	QSTTLKR (SEQ ID NO: 826)	VDHHLR (SEQ ID NO: 867)	EAHHLR (SEQ ID NO: 908)	DPSNLR (SEQ ID NO: 949)
	GFP6-ZF5	QQTNLTR (SEQ ID NO: 745)	VGSNLTR (SEQ ID NO: 786)	DKAQLGR (SEQ ID NO: 827)	EAHHLR (SEQ ID NO: 868)	RQSRLQR (SEQ ID NO: 909)	KGDHLRR (SEQ ID NO: 950)
	GFP6-ZF6	QQTNLTR (SEQ ID NO: 746)	VGSNLTR (SEQ ID NO: 787)	DKAQLGR (SEQ ID NO: 828)	EAHHLR (SEQ ID NO: 869)	EAHHLR (SEQ ID NO: 910)	DPSNLR (SEQ ID NO: 951)

Target Site	Zinc Finger Protein Name	F1	F2	F3	F4	F5	F6
	GFP6-ZF7	QQTNLTR (SEQ ID NO: 747)	VGSNLTR (SEQ ID NO: 788)	QSTTLKR (SEQ ID NO: 829)	VDHHLRR (SEQ ID NO: 870)	RQSRLQR (SEQ ID NO: 911)	KGDHLRR (SEQ ID NO: 952)
	GFP6-ZF8	QQTNLTR (SEQ ID NO: 748)	VGSNLTR (SEQ ID NO: 789)	QSTTLKR (SEQ ID NO: 830)	VDHHLRR (SEQ ID NO: 871)	EAHHLR (SEQ ID NO: 912)	DPSNLRR (SEQ ID NO: 953)
GFP-7	GFP7-ZF1	QSTTLKR (SEQ ID NO: 749)	VDHHLRR (SEQ ID NO: 790)	EAHHLR (SEQ ID NO: 831)	DPSNLRR (SEQ ID NO: 872)	QRSDLTR (SEQ ID NO: 913)	QGGTLRR (SEQ ID NO: 954)
	GFP7-ZF2	QSTTLKR (SEQ ID NO: 750)	VDHHLRR (SEQ ID NO: 791)	EAHHLR (SEQ ID NO: 832)	DPSNLRR (SEQ ID NO: 873)	TKQILGR (SEQ ID NO: 914)	QSTTLKR (SEQ ID NO: 955)
	GFP7-ZF3	QSTTLKR (SEQ ID NO: 751)	VDHHLRR (SEQ ID NO: 792)	RQSRLQR (SEQ ID NO: 833)	DSSVLRR (SEQ ID NO: 874)	QRSDLTR (SEQ ID NO: 915)	QGGTLRR (SEQ ID NO: 956)
	GFP7-ZF4	QSTTLKR (SEQ ID NO: 752)	VDHHLRR (SEQ ID NO: 793)	RQSRLQR (SEQ ID NO: 834)	DSSVLRR (SEQ ID NO: 875)	TKQILGR (SEQ ID NO: 916)	QSTTLKR (SEQ ID NO: 957)
	GFP7-ZF5	DKAQLGR (SEQ ID NO: 753)	EAHHLR (SEQ ID NO: 794)	EAHHLR (SEQ ID NO: 835)	DPSNLRR (SEQ ID NO: 876)	QRSDLTR (SEQ ID NO: 917)	QGGTLRR (SEQ ID NO: 958)
	GFP7-ZF6	DKAQLGR (SEQ ID NO: 754)	EAHHLR (SEQ ID NO: 795)	EAHHLR (SEQ ID NO: 836)	DPSNLRR (SEQ ID NO: 877)	TKQILGR (SEQ ID NO: 918)	QSTTLKR (SEQ ID NO: 959)

Target Site	Zinc Finger Protein Name	F1	F2	F3	F4	F5	F6
	GFP7-ZF7	DKAQLGR (SEQ ID NO: 755)	EAHHLSR (SEQ ID NO: 796)	RQSRLQR (SEQ ID NO: 837)	DSSVLRR (SEQ ID NO: 878)	QRSDLTR (SEQ ID NO: 919)	QGGTLRR (SEQ ID NO: 960)
	GFP7-ZF8	DKAQLGR (SEQ ID NO: 756)	EAHHLSR (SEQ ID NO: 797)	RQSRLQR (SEQ ID NO: 838)	DSSVLRR (SEQ ID NO: 879)	TKQILGR (SEQ ID NO: 920)	QSTTLKR (SEQ ID NO: 961)

[0496] Example 2: epigenetic editor sequences.

[0497] Amino acid sequences of exemplary epigenetic editors are provided below.

Exemplary fusion protein DNMT3A-3L-ZF-KRAB (SEQ ID NO.: 978) where zinc finger is GFP1-ZF1:

MAPKKKRKMNHDQEFDPPKVYPPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQVDRYIASEVCE
DSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDLVIGGSPCNDLSIVNPARKGLYEGTGRLFF
EFYRLLHDARPKEGDDRPFFWLFENVVAMGVSDKRDISRFLESNPVMIDAKEVSAAHRARYFWG
NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQGKDQHFVFMNEKEDILWC
TEMERVFGFPVHYTDVSNMSRLARQRLLGRSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPS
FSSGLVPLSLRGSHMGPMEIYKTVSAWKRQPVRVLSLERNIDKVLKSLGFLESGSGSGG
GTLKYVEDVTNVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYMFQFHRILQYALP
RQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVTLQDVRGRDYQNAMRVWSNIPG
LKSKHAPLTPKEEYLQAQVRSRSLDAPKVDLLVKNCLLPLREYFKYFSQNSLPLSGG
GGSGGGGSVGIHGVPSRPGERPFQCRICMRNFSHKSSLTRHTRTHTGEKPFQCRICMRNFSRT
EHLARHLRTHTGSQKPFQCRICMRNFSQSAHLKRHTRTHTGEKPFQCRICMRNFSRTEHLAR
HLRTHTGGGGSQKPFQCRICMRNFSHKSSLTRHTRTHTGEKPFQCRICMRNFSRPESLAPHL
RTHLRGSGGGSMDAKSLTAWSRTLVTFKDVFVDFTREEWKLLDTAQQIVYRNVMLENYK
NLVSLGYQLTKPDVILRLEKGEEPWLVEREIHQETHPDSETAFEIKSSV (italics: DNMT3A;
 Bold: DNMT3L; underline: KRAB)

[0498] Example 3: guide RNA design.

[0499] Cas9 protospacers are chosen based on homology from sequences that perfectly match or nearly perfectly match spacer sequences in target DNA sequences and predicted by the MIT Specificity Score (calculated by <http://crispor.tefor.net/>).

[0500] gRNA protospacer sequences that would permit epigenetic editors containing a Streptococcus pyogenes Cas9, or another Cas that can use the NGG PAM, to recognize the protospacer sequences identified throughout the target gene. gRNAs containing spacers of 20nts and

a total length of 100nts are synthesized. gRNAs are co-transfected with mRNA encoding the Cas9 epigenetic editor fusion protein into primary human hepatocytes via MessengerMax

Testing DNA demethylation domains: To test the functionality of candidate domains for removing DNA methylation, the domain is fused to a DNA-binding domain for testing in human cells. The effector domain, identified and extracted from the full protein sequence may be fused to the N-terminal or C-terminal end of any DNA-binding domain, using a variety of linkers. For example, a domain may be fused to Cas9. This fusion protein is then co-delivered into cells, along with a gRNA, using standard cell culture techniques. This may include plasmid transfection or electroporation, mRNA transfection or electroporation, or viral transduction. Because removal of DNA methylation marks at CpG dinucleotides is expected to increase target gene expression, this may be assayed by standard techniques such as RT-qPCR, staining for cell surface marker and quantifying by flow cytometry, ddPCR and Western blotting. Additionally, direct readout of DNA methylation is obtained through bisulfite sequencing. In this method, bisulfite treatment of DNA converts cytosine residues to uracil but leaves 5-methylcytosine residues unaffected. Standard Sanger sequencing or next-generation sequencing can then be performed to determine the rate of methylation at CpG dinucleotides.

[0507] Example 5: alternate DNMT effectors and effector fusions.

[0508] GripTite293 cells were seeded in 96-well plates and transfected with 25 ng of a gRNA-expressing plasmid (targeting VIM), 50 ng of an Effector-DBD fusion plasmid, and 5ng of a Puromycin resistance plasmid using Mirus TransIT transfection reagent. VIM-targeting gRNAs used can be found in SEQ ID NO.: 962-969. Effector-DBD fusions can be found in SEQ ID NO.: 1092-1133.

[0509] At day 1 post transfection, cells were cultured with Puromycin to select for positively transfected cells. At day 6 or day 7 post transfection, cells were analyzed for VIM expression via FACS (FIG. 2).

[0510] When human-human and human-mouse fusions were tested against plant DNMT effectors and effector fusions, the mammalian fusions exhibited greater VIM silencing (FIG. 3A); similar results were found when the mammalian fusions were compared to DNMT effectors and effector fusions from bacteria, fungi, and *Drosophila* (FIG. 3B).

[0511] Example 6: alternate KRAB and non-KRAB repressors.

[0512] GripTite293 cells were seeded in 96-well plates and transfected with 25 ng of a gRNA-expressing plasmid (targeting VIM), 50 ng of a DBD-Effector fusion plasmid, and 5ng of a Puromycin resistance plasmid using Mirus TransIT transfection reagent. VIM-targeting gRNAs used can be found in SEQ ID NO.: 962-969. DBD-Effector fusions can be found in SEQ ID NO.: 1002-1091.

[0513] At day 1 post transfection, cells were cultured with Puromycin to select for positively transfected cells. At day 6 post transfection, cells were analyzed for VIM expression via FACS (FIG 5). Many alternate KRAB and non-KRAB repressors effectively silenced VIM expression.

[0514] Example 7: gene repression.

[0515] GripTite293 cells were seeded in 96-well plates and transfected with 25 ng of a gRNA-expressing plasmid (either single gRNA or 4x (quad) gRNA plasmid targeting CD151 or CLTA), 50 ng of a DBD-Effector fusion plasmid, and 5ng of a Puromycin resistance plasmid using Mirus TransIT transfection reagent. CD151-targeting gRNAs used can be found in SEQ ID NO.: 970-977. DBD-Effector fusion plasmids used can be found in SEQ ID NO.: 978-1001.

[0516] At day 1 post transfection, cells were cultured with Puromycin to select for positively transfected cells. At day 6 post transfection, cells were analyzed for CD151 or CLTA expression via FACS. FIG 6-7 show that many of the alternate KRAB combination effectively silence CD151.

[0517] While preferred embodiments of the present disclosure have been shown and described herein, it will be obvious to those skilled in the art that such embodiments are provided by way of example only. Numerous variations, changes, and substitutions will now occur to those skilled in the art without departing from the disclosure. It should be understood that various alternatives to the embodiments of the disclosure described herein may be employed in practicing the disclosure. It is intended that the following claims define the scope of the disclosure and that methods and structures within the scope of these claims and their equivalents be covered thereby.

Other Embodiments

[0518] From the foregoing description, it will be apparent that variations and modifications may be made to the disclosure described herein to adopt it to various usages and conditions. Such embodiments are also within the scope of the following claims.

[0519] The recitation of a listing of elements in any definition of a variable herein includes definitions of that variable as any single element or combination (or subcombination) of listed elements. The recitation of an embodiment herein includes that embodiment as any single embodiment, any portion of the embodiment, or in combination with any other embodiments or any portion thereof.

[0520] As is set forth herein, it will be appreciated that the disclosure comprises specific embodiments and examples of base editing systems to effect a nucleobase alteration in a gene and methods of using same for treatment of disease including compositions that comprise such base editing systems, designs and modifications thereto; and specific examples and

GFP7-ZF7	878	DSSVLRR	919	QRSDLTR	960	QGGTLRR
GFP7-ZF8	879	DSSVLRR	920	TKQILGR	961	QSTTLKR

SEQ ID NO	Description	Sequence
962	SPACER	GCCTACCGCAGGATGTTCCG
963	SPACER	GGCCCGGGGACGAGGCGTAG
964	SPACER	GCGCACGGCAGAGGAGCGCG
965	SPACER	GCCCTCGTTCGCTCTTCTC
966	TRACR	GTTTAAGAGCTAAGCTGGAAACAGCATAGCAAGTTTAAATAAGG CTAGTCCGTTATCAACTTGAAAAAGTGGCACCGAGTCGGTGCTTT TTTT
967	TRACR	GTTTAAGAGCTAAGCTGGAAACAGCATAGCAAGTTTAAATAAGG CTAGTCCGTTATCAACTTGAAAAAGTGGCACCGAGTCGGTGCTTT TTTT
968	TRACR	GTTTAAGAGCTAAGCTGGAAACAGCATAGCAAGTTTAAATAAGG CTAGTCCGTTATCAACTTGAAAAAGTGGCACCGAGTCGGTGCTTT TTTT
969	TRACR	GTTTAAGAGCTAAGCTGGAAACAGCATAGCAAGTTTAAATAAGG CTAGTCCGTTATCAACTTGAAAAAGTGGCACCGAGTCGGTGCTTT TTTT
970	SPACER	GTGTCCAGGGACAATGAGCA
971	SPACER	GCGGCCCGGAGCCTACGAGG
972	SPACER	GCGGCGGCGGCAGCAGCTGCG
973	SPACER	GCCGGACTCGGACGCGTGGT
974	TRACR	GTTTAAGAGCTAAGCTGGAAACAGCATAGCAAGTTTAAATAAGG CTAGTCCGTTATCAACTTGAAAAAGTGGCACCGAGTCGGTGCTTT TTTT
975	TRACR	GTTTAAGAGCTAAGCTGGAAACAGCATAGCAAGTTTAAATAAGG CTAGTCCGTTATCAACTTGAAAAAGTGGCACCGAGTCGGTGCTTT TTTT
976	TRACR	GTTTAAGAGCTAAGCTGGAAACAGCATAGCAAGTTTAAATAAGG CTAGTCCGTTATCAACTTGAAAAAGTGGCACCGAGTCGGTGCTTT TTTT
977	TRACR	GTTTAAGAGCTAAGCTGGAAACAGCATAGCAAGTTTAAATAAGG CTAGTCCGTTATCAACTTGAAAAAGTGGCACCGAGTCGGTGCTTT TTTT
978	DNMT3A-3L-ZF-KRAB (ZF is GFP1-ZF1)	<u>MAPKKKRMNHDQEFDPKVVPPVPAEKRPVLSLFDGIATGLLVL</u> <u>KDLGIQVDRIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIEWG</u> <u>PFDLVIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDR</u> <u>PFFWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWGNL</u> <u>PGMNRPLASTVNDKLELOECLEHGRIAKFSKVRTITTRSNSIKQKDOHF</u> <u>PVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLGRSWSPV</u> <u>IRHLFAPLKEYFACVSSGNSNANSRGPSSFSSGLVPLSLRGSHMGPM</u> <u>IYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGGGTLK</u> <u>YVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYMEQ</u> <u>FHRILQYALPRQESQRPFWFIFMDNLLLTEDDQETTTRFLQTEAV</u> <u>TLQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVR</u> <u>SRSKLDAPKVDLLVKNCLLPLREYFKYFSQNSLPLSGGGSGSGGG</u> <u>SVGIHGVPSPRGERPFQCRICMRNFSHKSSLTRHTRTHTGEKPFQCR</u> <u>CMRNFSRTEHLARHLRTHTGTSQKPFQCRICMRNFSQSAHLKRHTRT</u> <u>HTGEKPFQCRICMRNFSRTEHLARHLRTHTGSGGSGKPFQCRICMRN</u> <u>FSHKSSLTRHTRTHTGEKPFQCRICMRNFSRPESLAPHLRTHLRGSGG</u> <u>GSMDAKSLTAWSRTLVTFKDVFDFTREEWKLLDTAQQIVYRNVM</u>

		<u>LENYKNLVSLGYQLTKPDVILRLEKGEEPWLVEREIHQETHPDSETA FEIKSSV</u>
979	DNMT3A/ L- dSpCas9- XTEN16- ZIM3	MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYELQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSADAILSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQLKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVVREINNYHHAHDAYLNAVVGTA LIKYPKLESEFVYGD YKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYS VLVAKVEKG KSKKLKSVKELLGITIMERS SSFENPIDFLEAKGYKEVKKDLI IKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GMNNSQGRVTFEDVTVNFTQGEWQRLNPEQRNLYRDV MLENYSNL VSVGQGETTKPDVILRLEQGKEPWLEEEVLGSGRAEKNGDIGGQIW KPKDVKESL
980	DNMT3A/ L- dSpCas9- XTEN16- HP1b	MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS

		<p> HMGPMEIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAQL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIK KGILQTVKVVDDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSDF RKDFQFYKVVREINNYHHAHDAYLNAVVGTALEKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEVG KSKKLKSVKELLGITIMERSSEKPNIDFLEAKGYKEVKKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYETRIDLSQLGGDPKKKRKVSGSETPGTSESATPEST GMGKKQNKKKVEEVLEEEEEYYVEKVLDRRVVKGVYLLKWK GFSDEDNTWEPEENLDCPDLIAEFLQSQKTAHETDKSEGGKRKADSD SEDKGEESKPKKKKEESEKPRGFARGLEPERIIGATDSSGELMFLMK WKNSEADLVPAAKEANVKCPQVVISFYERLTWHSYPSEDDDKKD DKN </p>
981	DNMT3A/ L- dSpCas9- XTEN16- RYBP	<p> MNHDQEFDPKVPVPAEKRPVRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLESNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMEIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK </p>

		<p>VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAQL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIAK KGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGSELDAKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKREINNYHHAHDAYLNAVVGTAIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVAKVEKG KSKKLKSVKELLGITIMERSSEKPNIDFLEAKGYKEVKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLG SPEDNEQQLFVEQHKHYLDEIEQISEFSKRVLADANLKVLSAYN KHRDKPIREQAENIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GPSEANSIQSANATTKTSETNHTSRPRLKNVDRSTAQQLAVTVGNVT VIITDFKEKTRSSSTSSSTVTSSAGSEQNQSSS</p>
982	DNMT3A/ L- dSpCas9- XTEN16- ZFP28	<p>MNHDQEFDPKVPVPPVPAEKRPVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLQAQVRSRSL LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAQL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK</p>

		<p>NLPNEKVLPKHSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KKGILQTVKVVDDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSDF RKDFQFYKVINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGD YKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSEFKNPIDFLEAKGYKEVKKDLIIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVLADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSITEGLYETRIDLSQLGGDPKKRKRKVSGETPGTSESATPEST GNKKLEAVGTGIEPKAMSQGLVTFGDVAVDFSQEEWEWLNPIQRNL YRKVMLENYRNLASLGLCVSKPDVSSLEQKKEPW</p>
983	DNMT3A/ L- dSpCas9- XTEN16- ZN627	<p>MNHDQEFDPKVPVPPVPAEKRPVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRQPVRLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKRKYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDA KLQLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASASQSFIERMTNFDK NLPNEKVLPKHSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KKGILQTVKVVDDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSDF</p>

		<p>RKDFQFYKVVREINNYHHAHDAYLNAVVGTA LIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSSF EKNPIDFLEAKGYKEVKKDLI IKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVLADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKRKVS GSETPGTSESATPEST GDSVAFEDVAVNFTLEEWALLDPSQKNLYRDMRETFRNLASVGK QWEDQNIEDPFIKIPRRNISHIPERLCESKEGGQ GEE</p>
984	DNMT3A/ L- dSpCas9- XTEN16- CDYL2	<p>MNHDQEFDPKVPVPPVPAEKRPVRLSLFDGIATGLLV LKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKH IQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSA AHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRS NSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRL LG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFS SGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFL ESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCD RCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLL TEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEE EYLQAQVRSRK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAP PPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKRKYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFS NEMAKVDDSFHRL EESFLVEEDKKHERHP IFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLR LIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRRENLI AQLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKL QLSKD TYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGAS AQSFIERMTNFDK NLPNEKVL PKHSLLYEYFTVYNELTKVKYVTEGM RKP AFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IK KGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIE EG I KELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS KLVSDF RKDFQFYKVVREINNYHHAHDAYLNAVVGTA LIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSSF EKNPIDFLEAKGYKEVKKDLI IKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVLADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKRKVS GSETPGTSESATPEST</p>

		GASGDLYEVERIVDKRKNKKGKWEYLIRWKGYGSTEDTWEPEHHL LHCEEFIDEFNLHMSKDKRIKSGKQSSTSKLLRDS
985	DNMT3A/ L- dSpCas9- XTEN16- TOX	MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYELQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKYVMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLAHAMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSAAILSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQLKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGSELDAKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVVREINNYHHAHDAYLNAVVGTA LIKYPKLESEFVYGDYK VYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYS VLVAKVEKGKSKKLKSVKELLGITIMERS SSFENPIDFLEAKGYKEVKKDLI IKLPKYSLFELENGRKRMLASAGELQKGNELALPSKYV NFLYLASHYEKLGSPEDNEQQLFVEQHKHYLDEIIE QISEFSKRVILADANLDKVL SAYNKH RDKPIREQAENIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKR KVSGETPGTSESATPESTGKDPNEPQKPV SAYALFFRDTQAAIKGQNP NATFGEVSKIVASMWDGLGEEQKQVYKKKTEAAK KEYLKQLAAYRASLVSK
986	DNMT3A/ L- dSpCas9- XTEN16- SCMH1	MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGGG

		<p>GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTTFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDA KLQSKDQTYDDDLNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPHKSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQLKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIK RQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS KLVSDFRKDFQFYKVVREINNYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAKSE QEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDK LIARKKDWDPKKYGGFDSPTVAYS VLVVAKEKGKSKKLKSVKELLGITIMERS SSFENPIDFLEAKGYKEVKDLI IKLPKYSLFELENGRKMLASAGELQKGNELALPSKYV NFLYLASHYEKLKGSPE DNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANL DKVLSAYNKH RDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDR KRYTSTKEVLDATLIHQ SITGLYETRIDLSQLGGDPKKKRKVSGSETPGTSESATPE STGDASRLSGRDPSSWTVEDVMQFVREADPQLGPHADL FRKHEIDGKALLLRSDMMMKYMG LKLGPALKLSYHIDRLKQKGF</p>
987	DNMT3A/ L- dSpCas9- XTEN16- SCML2	<p>MNHDQEFDPKVPYPPVPAEKRP PIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYV GDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRL FFEFYRLLDARPKEGDDRRPF FWLFENVVAMGVSDKRDISRFL ESNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHG GRIAKFSKVRTITTRSNSIKQK GKDQHFPVFMNEKEDILWCTEMERV FGFPVHYTDVSNMSRLARQRL LGRSWSVPVIRHLFAPLKEYFACVSSG NSNANSRGPSFSSGLVPLSLRGS HMGPM EYKTVSAWKRQPVRVLSLFRNIDKVLK SLGFLESGSGGGTLKYVEDVTNVVRRD VEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLL TEDDQETTTTFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPL TPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSL PLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGS APGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIG LAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDS GETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRL VESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADL RLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEEN PINASGVDAKAILSARL</p>

		<p>SKSRLENLIAQLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVLKMKKNYWRQLLNAKLITQRKFDNLTKAERGGSELDAKAGFIK QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVRINNYHHAHDAYLNAVVGTA LIKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKDLIIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKRKVS GSETPGTSESATPEST GKQGF SKDPSTWSVDEVIQFMKHTDPQISG PLADLFRQHEIDGKALF LLKSDVMMKYMGLKLGPALKLCYIEKLEK GKYS</p>
988	DNMT3A/ L- dSpCas9- XTEN16- CBX8	<p>MNHDQEFDPKVPYPPVPAEKRP PIRVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKH IQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRL LHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFL ESNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSK VRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDV SNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRG PSFSSGLVPLSLRGS HMGPMIYKTVSAWKRQPVRVLSLFRNIDKVLK SLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPL GSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDD QETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEE EYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGP SSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSP AGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKRKVYMDKKYSIGLAIG TNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAE ATRLKRTARRRYT RRKNRICYLQEIFS NEMAKVDDSFHRL EESFLVEEDKKHER HPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLR LIYLALAHMIKFRG HF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPIN ASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIASLGLTPNF KSNFDLAEDAKL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSD AILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPE KYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLV KLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPFLKDNRE KIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGAS AQSFIERMTNFDK NLPNEKVLPKHSLLEYEFTVYNELTKVKYVTEG MRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEI SGVEDRFNASLGT YHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFE DREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQ SGKTILDFLKSDG</p>

		<p>FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIK KGILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVVREINNYHHAHDAYLNAVVGTAIKKYPKLESEFVYGD YKVYDVRKMKIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNIKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSEKKNPIDFLEAKGYKEVKKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLK SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYETRIDLSQLGGDPKKRKRKVSGETPGTSESATPEST GGSGPPSSGGGLYRDMGAQGGRPSTLIARIPVARILGDPEEESWSPSLT NLEKVVVTDVTSNFLTVTIKESNTDQGFFKEKR</p>
989	DNMT3A/ L- dSpCas9- XTEN16- TOX3	<p>MNHDQEFDPKVPYPPVPAEKRPVRLSLFDGIATGLLVKLDLGIQV DRYIASEVCEDSITVGMVRHQKIMYVGDVRSVTQKHIEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLHHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKRKYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRRLLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDITYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIK KGILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVVREINNYHHAHDAYLNAVVGTAIKKYPKLESEFVYGD YKVYDVRKMKIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNIKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG</p>

		KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKRKVSGETPGTSESATPEST GKDPNEPQKPV SAYALFFRDTQAAIKGQNP NATFGEVSKIVAS MWD SLGEEQKQVYKRKTEAAKKEYLKALAA YRASLVSK
990	DNMT3A/ L- dSpCas9- XTEN16- TOX4	MNHDQEFDPKVPVPAEKRPVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLESNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKRKYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFS NEMAKVDDSFHRL EESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLA LAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDA KL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IK KGILQTVKVVDL VKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIE EG I KELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS KLVSDF RKDFQFYK VREINNYHHAHDAYLNAVVG TALIKKYPKLESEFVYGD YKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWD PKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKRKVSGETPGTSESATPEST GKDPNEPQKPV SAYALFFRDTQAAIKGQNP NATFGEVSKIVAS MWD SLGEEQKQVYKRKTEAAKKEYLKALAA YKDNQECQ
991	DNMT3A/ L- dSpCas9-	MNHDQEFDPKVPVPAEKRPVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLDARPKEGDDRPF

	XTEN16- I2BP1	FWLFENVVAMGVSDKRDISRFLESNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQGK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPFSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDA QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KIGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEEDIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKREINNYHHAHDAYLNAVVGTA LIKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVAKVEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKRKVSGETPGTSESATPEST GASVQASRRQWCYLC DLPKMPWAMVWDFSEAVCRGCVNFEGADR IELLIDAAARQLKRSHVLPEGRSPGPPALKHPATKDLA
992	DNMT3A/ L- dSpCas9- XTEN16- MBD2	MNHDQEFDPKVPYPPVPAEKRP IRVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKH IQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLH DARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLESNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQGK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPFSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS

		<p>EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKREINNYHHAHDAYLNAVVGTA LIKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVAKVEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIEQISEFSKRVLADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKKRKVSGSETPGTSESATPEST GMRAHPGGGRCCPEQEEGESAAAGSGAGGDSAIEQGGQGSALAPSP VSGVRREGARGGGGRGRGRWKQAGRGGGVCGRGRGRGRGRGRGRG RGRGRGRPPSGGSGLGDDGGGCGGGGSGGGGAPRREPVPFPGSAG PGPRGPRATESGKRMDCPALPPGWKKEEVIRKSGLSAGKSDVYFSP SGKKFRSKPQLARYLGNTVDLSSFDFTGKMMPSKLQKNKQRLRND PLNQNKGKPDNLNTLPIRQTASIFKQPVT KVTNHPSNKKVSDPQRMN EQPRQLFWEKRLQGLSASDVTEQIIKT MELPKGLQG VGP GSNDETLL SAVASALHTSSAPITGQVSAAVEKNPAVWLNTS QPLCKAFIVTDEDI RKQEERVQQVRKKLEEALMADILSRAADTEEMDIEMDSGDEA</p>
993	DNMT3A/ L- dSpCas9- XTEN16- SetDB1	<p>MNHDQEFDPKVPYPPVPAEKRP PIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKH IQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDAR PKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSA AHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTIT TRSNSIKQK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMS RLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGL VPLSLRGS HMGPMIYKTVSAWKRQPV RVL SLFRNIDKVLKSLGFLESGSGGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCD RCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQET TTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEY YLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAP PPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPT STEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGW AVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLK RTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKK HERHPIFGN</p>

		IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDQYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASQAQSFIERMTNFDK NLPNEKVLPHKSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVVREINNYHHAHDAYLNAVVGTA LIKYPKLESEFVYGD YKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYS VLVAKVEKG KSKKLKSVKELLGITIMERSSEKPNIDFLEAKGYKEVKKDLI IKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHY EKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANL DKVLSAYN KHRDKPIREQAENIHLFTLTNLGAPAAFKYFDTTIDRKRYT STKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKRKVS GSETPGTSESATPEST GMSSLPGCIGLDAATATVESEEIAELQQAVVEELGISMEEL RHFIDEE LEKMDCVQQRKKQLAELETWVIQKESEVAHVDQLFDDAS RAVTNC ESLVKDFYSKLGLQYRDSSSEDESSRPTEIIEIPDEDDDL VLSIDSGDAG SRTPKDQKLREAMAALRKSAQDVQKFMDAVNKKSSSQDL HKGTLS QMSGELSKDGLIVSMRILGKKRTKTWHKGTLIAIQT VGP GKKYKV KFDNKGKSLLSGNHIA YDYHPPADKLYVGS RVVAKYKDG NQVWLY AGIVAETPNVKNKL RFLIFFDDGYASYVTQSELYPICRPLKKTWEDIE DISCRDFIEEYV TAYPNRPMVLLKSGQLIKTEWEGTWWKSRVEEVD GSLVRILFLDDKRC EWIRGSTRLEPMFSMKTSSASALEKKQ GQLRT RPNMGAVRSKGPV VQYTQDLTGTGTQFKPVEPPQPTAPPAPPFP PPAP PLSPQAGDS DLESQLAQSRKQVAKKST SFRPGSVGSGHSSPTSP ALSE NVSGGKPGINQTYR SPLGSTASAPAPSALPAPPAPPV FHGMLERAPAE PSYRAPMEKLFYLPHVCSY TCLSRVRPMRNEQYRGKNPL LVPLLYD FRMTARRRVNRKMGFHV IYKTPCGLCLRTMQEIERYLFETGCD FLF LEMFC LDPYVLVDRKFQYPKPFY YILDITYGKEDVPLSCVNEIDTTP PP PQVAYS KERIPGKGVFINTGPEFLVGCDCKDGCRD KSKCACHQLTIQ ATACTPGGQINPNSGYQYKRL EECLPTGVYECNKRCCKDPNMCTNR LVQHGLQVRLQLFKTQNKGWGIRCLDDIAKGSFV CIYAGKILTDDFA DKEGLEMGDEYFANLDHIESVENFKEGYESDAPC SSDSSGVDLKDQ EDGNSGTEDPEESNDDSSDDNFCKDEDFSTSSV WRSYATRRQTRGQ KENGLSETTSKDSHPPDLGPPHIPVPPSIPVGGC NPPSSEETPKNKVAS WLSCNSVSEGGFADSDSHSSFKTNEGGEGRAGGS RMEA EAKASTSGL GIKDEGDIKQAKKEDTDDR NKMSVVTESSRNYGYNPSPVKPEGLRR PPSKTSMHQSRRLMASAQSNPDDVLTSSSTESE GESGTSRKPTAGQ TSATAVDSDDIQTISSGSEGDDFEDKKNMTGPMK RQVAVKSTRGFA LKSTHGIAIKSTNMA SVDKGESAPVRKNTRQFYDGEESCYIIDAKLE GNLGRYLNHSCSPNLFVQNVFVDTHDLRFPWVA FFASKRIRAGTELT WDYNYE VGSVEGKELLCCCGAIECRGRL
--	--	---

994	DNMT3A/ L- dSpCas9- XTEN16- MeCP2	<p> MNHDQEFDPKPVYPPVPAEKRPPIRVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLDARPKEGDDRRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQGK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRQPVRLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDA KLQSKDQYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPHKSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQLKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVLKMKKNYWRQLLNAKLITQRKFDNLTKAERGGSELDAKAGFIK QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD F RKDFQFYKVRINNYHHAHDAYLNAVVGTA LIKYPKLESEFVYGDYKVYDVRKMI AKSEQEIGKATAKYFFYSNIMNFFKTEIT LANGEIRKRPLIETNGETGEIVWDKGRD FATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDS PTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKDLI IKLPKYSLFELENGRKRMLASAGELQKGNEL ALPSKYVNFLYLASHYEKLGKSPEDNEQQL FVEQHKHYLDEIIEQISEFSKRVLADANL DKVLSAYNKH RDKPIREQAENIIHLFTLT NLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKR KVSGSETPGTSESATPESTGMVAGMLGL REEKSEDQDLQGLKDKPLKFKKVKKDKKEE KEGKHEPVQPSAHHSAEPAEAGKAETSEGS SAPAVPEASAPKQRRSIIRDRGPMYDDPT LPEGWTRKLKQRKSGRSAGKYDVYLINPQ GKAFRSKVELIAYFEKVGDTSLDPNDFDFT VTGRGSPSRREQPKPKPKSPKAPGTGRGR PKGSGTTRPKAATSEG VQVKRVLEKSPGKLL VKMPFQTSPGKAEGGGATTSTQVMVIKRPGR KRKA EADPQAIPKKRGRKPGSVVAAAAE AKKAVKESSIRSVQETVLPKKRKRTRET VSIEVKEVVKPLL VSTLGEKSGKGLKTCKSP GRKSKESP KGRSSSASSPPKKEHHHHHH HSESPKAPVPLLPLPPPPPEPESEDPTSPPE PQDLSSSVCKEEKMPRGGSLESDGCPKEPA KTQPAVATAATAAEKYKHRGEGERKDIVSS MPPNREEPVDSRTPVTERVS </p>
-----	---	---

995	DNMT3A/ L- dSpCas9- XTEN16- Kap1	<p>MNHDQEFDPKVPVPAEKRPVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLDARPKEGDDRRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRQPVRLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDA KLQSKDQYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKNLREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASQSFIERMTNFDK NLPNEKVLPHKSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKMKKNYWRQLLNAKLITQRKFDNLTKAERGGSELDAKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD F RKDFQFYKVVREINNYHHAHDAYLNAVVGTA LIKKYPKLESEFVYGDYKVYDVRKMI AKSEQEIGKATAKYFFYSNIMNFFKTEIT LANGEIRKRPLIETNGETGEIVWDKGRD FATVRKVLSPQVNIKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDS PTVAYSVLVVAKEKGKSKKLKSVKELL GITIMERSSSFENPIDFLEAKGYKEVKD LIKLPKYSLFELENGRKRMLASAGELQK GNELALPSKYVNFLYLASHYEKLKGS PEDNEQKQLFVEQHKHYLDEIIEQISEF SKRVILADANLDKVL SAYNKH RDKPIREQAENIIHLFTLTNLGAPAAFKY FDTTIDRKRYTSTKEVLDATLIHQ SITGLYETRIDLSQLGGDPKKRKVSGSE TPGTSESATPESTGMAASAAAASAAA AASAGSPGPGEGSAGGEKRSTAPSAA SASASAAASSPAGGGAEALELLEHCGV CRERLRPEREPRLLPCLHSACSACL GPAAPAAANSSGDGGAAGDGTVD CVPCKQQCFSKDIVENYFMRD SGSKAATDAQDANQCCTSCEDNAPAT SYCVECSEPLCETC VEAHQ RVKYTKDHTVRSTGPAKSRDGERTVY CNVHKHEPLVLFCESCDTLTC RDCQLNAHKDHQYQFLEDAVRNQRK LLASLVKRLGDKHATLQKSTKEVR SSIRQVSDVQKRQVQDVKMAILQIM KELNKRGRVLVNDQKVTEGQ QERLERQHWTMTKIQKHQEHILRFAS WALESNNNTALLLSKKLIYFQL HRA LKMIVDPVEPHGEMKFQWDLNAWTK SAEAFGKIVAE RPGTNSTGPAPMA PPAPGPLSKQSGSSQPMEVQEGYGF GSGDDPYSSAEPHVSGVKRSRSGE GEVSGLMRKVPRVSLERLDDLTA DSQPPVFKVFPGSTTEDYNLIVIERG AAAAAATGQPGTAPAGTPGAPPLA GMA</p>
-----	--	---

		IVKEEETEAAIGAPPTATEGPETKPVLMALAEGPGAEGPRLASPSGST SSGLEVVAPEGTSAPGGPGTLDSDSATICRVQCQKPGDLVMCNQCEFC FHLDCPLPALQDVPGEWSCSLCHVLPDLKEEDGSLSLDGADSTGV VAKLSPANQRKCERVLLALFCHEPCRPLHQLATDSTFSLDQPGGTLD LTLIRARLQEKLSPPYSSPQEFQADVGRMFKQFNKLTEDKADVQSIIG LQRFETRMNEAFGDTKFSAVLVEPPPMSLPGAGLSSQELSGGPGDG P
996	DNMT3A/ L- dSpCas9- XTEN16- HP1a	MNHDQEFDPKVPYPPVPAEKRPVRLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQKIMYVGDVRSVTQKHIEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLESNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPFSFSSGLVPLSLRGS HMGPMIYKTVSAWKRQPVRLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYQLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKKGASAQSFIERMTNFDK NLPNEKVLPHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIK KGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSDF RKDFQFYKVRINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFYLYASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQITGLYETRIDLSQLGGDPKKKRKVSGETPGTSESATPEST GMGKKTARTADSSSSSEDEEYVVEKVLDRRVVKQVEYLLKWKG SEEHNTWEPEKNLDCPELISEFMKKYKKMKEGENNKPREKSES KSNFNSADDIKSKKKREQSNDIARGFERGLEPEKIIGATDSCGDLMF LMKWKGTDADLVLAKEANVKCPQIVIAFYERLTWHAYPEDAEN KEKETAKS

997	DNMT3A/ L- dSpCas9- XTEN16- EED	<p>MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLDARPKEGDDRRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRQPVRLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDA KLQSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPHKSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKGILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDIRLSDYDVAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKMKKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSDF RKDFQFYKVBREINNYHHAHDAYLNAVVGTA LIKKYPKLESEFVYGDYKVYDVRKMI AKSEQEIGKATAKYFFYSNIMNFFKTEIT LANGEIRKRPLIETNGETGEIVWDKGRD FATVRKVLSPQVNIKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDS PTVAYSVLVVAKEKGKSKKLKSVKELL GITIMERSSSFENPIDFLEAKGYKEVKKDL IIKLPKYSLFELENGRKRMLASAGELQKGNEL ALPSKYVNFLYLASHYEKLKGPSPE DNEQKQLFVEQHKHYLDEIIEQISEFSKRV ILADANLDKVL SAYNKH RDKPIREQAENIIHLFTLTNLGAPAAFKYF DTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKVSGSETPGT SESATPESTGMSEREVSTAPAGTDM PAAKKQKLSSDENSNDLSGDENDDAVSIE SGTNTERPDTPNTPNAPGRKSWGKGKWK SKKCKYSFKCVNSLKEDHNQPLFGVQFN WHSKEGDPLVFATVGSNRVTLYECHSQGEIR LLQSYVDADADENFYTCAWTYDSNTSHPL LAVAGSRGIIRIINPITMQCIKH YVGHGNAINELKFHPRDPNLLSVSKDHALRL WNIQTDTLVAIFGGVEGHRDEVLSADYD LLGEKIMSCGMDHSLKLWRINSKRMMNAIKES YDYNPNKTNRPFISQKIHFPDFSTRDIHRN YVDCVRWLGLILSKSCENAIVCWKPGKME DDIDKIKPSESNVTILGRFDYSQCDIWYMRFS MDFWQKMLALGNQVGKLYVWDLEVEDPHKAK CTTLTHHKCGAAIRQTSFSRDSSILIAVCDD ASIWRWDRLR</p>
998	DNMT3A/ L-	<p>MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL</p>

	dSpCas9- XTEN16- RBBP4	VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRILIYLAHAMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAQL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKNLREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIK KGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVINNYHHAHDAYLNAVVGTAIHKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTETVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVAKVEKG KSKKLKSVKELLGITIMERSSEFKNPIDFLEAKGYKEVKKDLIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVLADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSIITGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GMADKEAAFDDAVEERVINEEYKIWKKNTPFLYDLVMTHALEWPS LTAQWLPDVTREPGKDFSIHRLVLGTHTSDEQNHLVIASVQLPNDDA QFDASHYDSEKGEFGGFGSVSGKIEIEIKINHEGEVNRARYMPQNPCI ATKTPSSDVLVFDYTKHPSKPDPSGECNPDRLRLRGHQKEGYGLSWN PNLSGHLLSASDDHTICLWDISAVPKEGKVVDKTIPTGHTAVVEDV SWHLLHESLFGSVADDQKLMIWDTRSNNTSKPSHSVDAHTAEVNCL SFNPYSEFILATGSADKTVALWDLRNLKLKLSFESHKDEIFQVQWS PHNETILASSGTDRRLNVWDLISKIGEEQSPEDAEDGPPELLFIHGGHT AKISDFSWNPNEPWVICSVSEDNIMQVWQMAENIYNDEDPEGSVDP EGQGS
999	DNMT3A/ L- dSpCas9-	MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG

	XTEN16-RCOR1	NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQGK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAQL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIK KGILQTVKVVDDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSDF RKDFQFYKVINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIEQISEFSKRVLADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSIITGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GMPAMVEKGPEVSGKRRGRNNAASASAAAAASAAASACASPAAT AASGAAASSASAAAAASAAAAPNNGQNKSLAAAAPNGNSSSSNSWEE GSSGSSSDEEHGGGGMRVGPQYQAVVPDFDPAKLARRSQERDNLG MLVWSPNQNLSEAKLDEYIAIAKEKHGYNMEQALGMLFWHKHNE KSLADLPNFTPFPDEWTVEDKVLFEQAFSFGKTFHRIQQMLPDKSI ASLVKFYYSWKKTRTKTSVMDRHARKQKRERESEDELEEANGNN PIDIEVDQNKESKKEVPPTETVPQVKKEKHSTQAKNRAKRKPPKGMF LSQEDVEAVSANATAATTVLRQLDMELVSVKRQIQNIKQTNALKE KLDGGIEPYRLPEVIQKCNARWTTEEQLLAVQAIRKYGRDFQAISDVI GNKSVVQVKNNFFVNYRRRFNIDEVLQEWAEHGKEETNGPSNQKPV KSPDNSIKMPEEEDEAPVLDVRYASAS
1000	DNMT3A/ L- dSpCas9- XTEN16- EZH2	MNHDQEFDPKVPYPPVPAEKRPVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQGK

		DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKYVMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLAHAMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDA KLQSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD F RKDFQFYKREINNYHHAHDAYLNAVVGTA LIKYPKLESEFVYGDYKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKVEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYNKHARDKPIREQAENIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKYVSGSETPGTSESATPEST GMGQTGKKSEKGPVCWRKRVKSEYMRLRQLKRFRRADEVKSMFSS NRQKILERTEILNQEWKQRRIQPVHILTSVSSLRGTTRECSVTSDLDFT QVIPLKTLNAVASVPIMYSWSPLQQNFMVEDETVLHNIPYMGDEV LDQDGT FIEELIKNYDGKVHGDRECGFINDEIFVELVNALGQYND DDDDDDGDDPEEREKQKDLEDHRDDKESRPPRKFPSDKIFEAISSMFPD KGTAEELKEKYKELTEQQLPGALPPECTPNIDGPNKSVQREQLHS FHTLFCRRCFKYDCFLHPFHATPNTYKRKNTETALDNKPCGPQCYQ HLEGAKEFAAALTAERIKTPPKRPGGRRRGRLPNNSSRPSTPTINVLE SKD TDS DREAGTETGGENNDKEEEEEKDETSSSSSEANSRCQTPIKMK PNIEPPENVEWSGAEASMFRLIGTYD N FCAIARLIGTKTCRQVYEF RVKESSIIAPAPAEDVDTPPRKKRKHRLWAAHCRKIQLKKDGS SNH VYNYQPCDHPRQPCDSSCPCVIAQNFCEKFCQCSSECQNRFP GCRCKAQCNTKQCPCYLAVRECDPDLCLTCGAADHWDSKNV SCKNCSIQRGSKKHL LAPSDVAGWGIFIKDPVQKNEFISEYCGE IISQDEADRRGKVYDKYMCSFLFNLNDFVVDATRKGNKIRFANHS VNPNCYAKVMMVNGDHRIGIFAKRAIQTGEELFFDYRYSQADAL KYVGIEREMEIP
--	--	--

1001	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-ZIM3	<p>MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQGK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRQPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDA KLQSKDITYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASQSFIERMTNFDK NLPNEKVLPHKSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKGILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDIRLSDYDVAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS KLVSDFRKDFQFYKVBREINNYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNIKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLI IKLPKYSLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEK LKGPSPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDK VLSAYNKHARDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDR KRYTSTKEVLDATLIHQ SITGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GRTLVTFKDVFDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGMNNSQGRVTF EDVTVNFTQGEWQRLNPEQRNLYRDVMLENYSNLVSVGQGETTKP DVILRLEQGKEPWLEEEVVLGSGRAEKNGDIGGQIWPKDVKESL</p>
1002	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-ZFP28	<p>MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQGK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRQPVRVLSLFRNIDKVLKSLGFLESGSGSGG</p>

		<p>GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYGQAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDA KLQSKDITYDDDLNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPHKSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIK RQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS KLVSDFRKDFQFYKVVREINNYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAKSE QEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDK LIARKKDWDPKKYGGFDSPTVAYSVLVVA KVEKGKSKKLKSVKELLGITIMERS SSFENPIDFLEAKGYKEVKDLI IKLPKYSLFELENGRKMLASAGELQK GNELALPSKYVNFLYLASHYEKLK GSPEDNEQKQLFVEQHKHYLDEIIE QISEFSKRVILADANLDKVL SAYNKHARDKPIREQAENIIHLFTL TNLGAPAAFKYFDTTIDRKRYTSTKE VLDATLIHQ SITGLYETRIDLSQLGGDPKKKRKV SGSETPGTSESATPESTGRTLVT FKDVFDFTREEWKLLDTAQQIVYR NVMLENYKNLVSLGYQLTKPDVIL RLEKGEESTEPSEGSAPGTSTEP SETGNKKLEAVGTGIEPKAMSQGL VTFGDVAVDFSQEEWEWLNPIQRN LYRKVMLENYRNLASLGLCVSKPD VISSLEQGKEPW</p>
1003	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-ZN627	<p>MNHDQEFDPKVPYPPVPAEK RKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQG KIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGT GRLFFEFYRLLDARPKEGDDRPF FWLFENVVAMGVSDKRDISR FLESNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQEC LEHGRIAKFSKVRTITTRSNSIKQ GKDQHFPVFMNEKEDILWCTE MERVFGFPVHYTDVSNMSRLARQ RLLGRSWSVPVIRHLFAPLKEYF ACVSSGNSNANSRGPSFSSGLVPL SLRGSHMGPMIYKTVSAWKRQPV RVLSLFRNIDKVLKSLGFLESGSG SGGGTLKYVEDVTNVVRRDVEKW GPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIF MDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYGQAMRVWSNIPGLK SKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYF SQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEP SEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDK KYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGAL LFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFH RLESFLVEEDKKHERHPIFGN</p>

		<p>IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAQL QLSKDQYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASQAQSFIERMTNFDK NLPNEKVLPHKSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYLQNGRDMYVDQ ELDINRLSDYDVAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVRINNYHHAHDAYLNAVVGTAIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTETVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVAKVEKG KSKKLKSVKELLGITIMERSSEKPNIDFLEAKGYKEVKKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLK SPEDNEQQLFVEQHKHYLDEIIEQISEFSKRVILADANLKVLSAYN KHRDKPIREQAENIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYETRIDLSQLGGDPKKRKRKVSGETPGTSESATPEST GRTLVTFKDVFVDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEESTEPSEGSAPGTSTEPSETGDSVAFEDVAV NFTLEEWALLDPSQKNLYRDMRETFRNLASVGKQWEDQNIEDPFK IPRRNISHIPERLCESKEGGQGE</p>
1004	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-RYBP	<p>MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKRKYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPFIGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAQL QLSKDQYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASQAQSFIERMTNFDK</p>

		<p>NLPNEKVLPKHSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KKGILQTVKVVDDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGSELDAKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVINNYHHAHDAYLNAVVGTAIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSEFKNPIDFLEAKGYKEVKKDLIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFYLAHYEKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAENIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYETRIDLSQLGGDPKKRKRKVSGETPGTSESATPEST GRTLVTFKDVFVDFTREWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEESTEPSEGSAPGTSTEPSETGPSEANSIQSAN ATTKTSETNHTSRPRLKNVDRSTAQQLAVTVGNVTVIITDFKEKTRS SSTSSSTVTSSAGSEQNQSSS</p>
1005	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB- CDYL2	<p>MNHDQEFDPKVPVPPVPAEKRPVRLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKRKYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLLESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLAALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASQAQSFIERMTNFDK NLPNEKVLPKHSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KKGILQTVKVVDDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE</p>

		<p> EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKREINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTVEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIEQISEFSKRVLADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GRTLVTFKDVFVDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEEPTSESGSAPGTSTEPSETGASGDLYEVE VDKRKNKKGKWEYLIRWKGYGSTEDTWEPEHLLHCEEFIGDEFNGL HMSKDKRIKSGKQSSTSKLLRDS </p>
1006	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-TOX	<p> MNHDQEFDPKVPVPAEKRPVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLHHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLV DSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKD TYDDDLDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKREINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTVEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG </p>

		SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GRTLVTFKDVFVDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGKDPNEPQKPV AYALFFRDTQAAIKGQNP NATFGEVSKIVASMDGLGEEQKQVYK KKTEAAKKEYLKQLAAYRASLVSK
1007	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB- SCMH1	MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLESNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYQLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFS NEMAKVDDSFHRLEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLA LAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIE EG I K E L G S Q I L K E H P V E N T Q L Q N E K L Y L Y Y L Q N G R D M Y V D Q ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS KLVSDF RKDFQFYK VREINNYHHAHDAYLNAVVG TALIKKYPKLESEFVYGD YKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSSF EKNPIDFLEAKGYKEVKKDLI KLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GRTLVTFKDVFVDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGDASRLSGRDP SWTVEDVMQFVREADPQLGPHADLFRKHEIDGKALLLLRSDMMM KYMGLKLGPAKLKSYHIDRLKQGGF

1008	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB- SCML2	<p>MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLDARPKEGDDRRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQGK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRQPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTTFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKYVMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDA KLQSKDITYDDDLNLLAQIGDQYADLFLAAKNLSAAILSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNRDILLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPHKSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKGILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDIRLSDYDVAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKMKKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD F RKDFQFYKVBREINNYHHAHDAYLNAVVGTA LIKKYPKLESEFVYGDYKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNIKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVAKVEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLG K SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKYVSGSETPGTSESATPEST GRTLVTFKDVFDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGKQGFSDPST WSVDEVIQFMKHTDPQISGPLADLFRQHEIDGKALFLKSDVMMKY MGLKLGPALKLCYYIEKLKEGKYS</p>
1009	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-CBX8	<p>MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLDARPKEGDDRRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQGK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRQPVRVLSLFRNIDKVLKSLGFLESGSGSGG</p>

		<p>GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDA KLQSKDITYDDDLNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPHKSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTTLTFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIK RQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS KLVSDFRKDFQFYKVVREINNYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAKSE QEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDK LIARKKDWDPKKYGGFDSPTVAYSVLV VAKVEKGKSKKLKSVKELLGITIMERS SSFENPIDFLEAKGYKEVKDLI IKLPKYSLFELENGRKMLASAGELQK GNELALPSKYVNFLYLASHYEKLK GSPEDNEQKQLFVEQHKHYLDEIIE QISEFSKRVLADANLDKVL SAYNKHARDKPIREQAENIIHLFTL TNLGAPAAFKYFDTTIDRKRYTSTKE VLDATLIHQ SITGLYETRIDLSQLGGDPKKKRKV SGSETPGTSESATPESTGRTLVT FKDVFDFTREEWKLLDTAQQIVY RNVMLENYKNLVSLGYQLTKPD VILRLEKGEESTEPSEGSAPGT STEPSETGGSGPPSSGGGLY RDMGAQGGRP SLIARIPVARILGDPEEESWSP SLTNLEKVVVTDVTSNFLT VTIKESNTDQGGFFKEKR</p>
1010	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-TOX3	<p>MNHDQEFDPKVPYPPVPAEK RKPIRVLSLFDGIATGLLV LKDGLIQVDRIASEV CEDSITVGMVRHQGKIMY VGDVRSVTQKHIQEWG PFDLVIGGSPCNDLSIV NPARKGLYEGTGRLFF EFYRLLHDARPKEGDD RPFFWLFENVVAMGVSD KRDISRFLSNPVMIDAK EVSAHRARYFWGNL PGMNRPLASTVNDKLE LQECLEHGRIAKFSK VRTITTRSNSIKQ GKDQHFPVFMNEKEDIL WCTEMERVFGFPVHY TDVSNMSRLARQRL LGRSWSVPVIRHLFAP LKEYFACVSSGNSNAN SRGPSFSSGLVPLSL RGSHMGPM EYKTVSAWKRQPV RVLSLFRNIDKVLK SLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN</p>

		<p>IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAQL QLSKDQYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASQAQSFIERMTNFDK NLPNEKVLPHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYLQNGRDMYVDQ ELDINRLSDYDVAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVRINNYHHAHDAYLNAVVGTAIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTETVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVAKVEKG KSKKLKSVKELLGITIMERSSEKPNIDFLEAKGYKEVKKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLG SPEDNEQQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYETRIDLSQLGGDPKKRKRKVSGETPGTSESATPEST GRTLVTFKDVFDVDFTRREEWKLDDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEESTEPSEGSAPGTSTEPSETGKDPNEPQKPV AYALFFRDTQAAIKGQNPATFGEVSKIVASMWDSLGEQKQVYKR KTEAAKKEYLKALAAAYRASLVSK</p>
1011	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-TOX4	<p>MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKGEDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKRKYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPFIGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAQL QLSKDQYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASQAQSFIERMTNFDK</p>

		<p>NLPNEKVLPKHSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KKGILQTVKVVDDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVINNYHHAHDAYLNAVVGTAIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSEFKNPIDFLEAKGYKEVKKDLIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLG SPEDNEQKQLFVEQHKHYLDEIEQISEFSKRVLADANLKVLSAYN KHRDKPIREQAENIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYETRIDLSQLGGDPKKRKRKVSGETPGTSESATPEST GRTLVTFKDVFVDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGKDPNEPQKPV AYALFFRDTQAIAIKGQNPATFGEVSKIVASMWDSLGEQKQVYKR KTEAAKKEYLKALAAAYKDNQECQ</p>
1012	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-I2BP1	<p>MNHDQEFDPKVPVPPVPAEKRPVRLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRP FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTSNSIKQK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKRKYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLAALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAFIERMTNFDK NLPNEKVLPKHSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKKIHKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KKGILQTVKVVDDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE</p>

		<p> EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKREINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTVEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSEFEKNPIDFLEAKGYKEVKKDLIIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIEQISEFSKRVLADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYETRIDLSQLGGDPKKRKRKVSGETPGTSESATPEST GRTLVTFKDVFVDFTREEWKLLDTAQQIVYRNVMLNENYKLVSLG YQLTKPDVILRLEKGEEPTSEPSAPGTSTEPSETGASVQASRRQW CYLCDLPKMPWAMVWDFSEAVCRGCVNFEGADRIELLIDAARQLK RSHVLPEGRSPGPPALKHPATKDLA </p>
1013	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-MBD2	<p> MNHDQEFDPKVPVPPVPAEKRPVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLHHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKRKYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLV DSTDKADRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDA KLQSKDITYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKREINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVKKTVEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSEFEKNPIDFLEAKGYKEVKKDLIIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG </p>

		<p>SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GRTLVTFKDVFVDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGMRAHPGGGRC CPEQEEGESAAAGSGAGGDSAIEQGGQGSALAPSPVSGVRREGARG GGRGRGRWKQAGRGGVCGRGRGRGRGRGRGRGRGRGRGRPPSG GSLGGDGGGCGGGSGGGGAPRREPVPFPGSGSAGPGPRGRATES GKRMDCPALPPGWKKEEVIRKSGLSAGKSDVYYFSPSGKKFRSKPQ LARYLGNTVDLSSFDFTGKMMP SKLQKNKQRLRNDPLNQNKGP DLNTTLPIRQTASIFKQPVTKTNTNHP SNKVKSDPQRMNEQPRQLFWE KRLQGLSASDVTEQIIKTMELPKGLQGVGPGSNDETLLSAVASALHT SSAPITGQVSAAVEKNPAVWLNTSQPLCKAFIVTDEDIRKQEERVQQ VRKKLEEALMADILSRAADTEEMDIEMDSGDEA</p>
1014	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB- MeCP2	<p>MNHDQEFDPKVPVPPVPAEKRPVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVG D VRSVTQKHIQEWGPF DL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQ GK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRL LG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMEIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEP KKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFS NEMAKVDDSFHRL EESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLV DSTDKADLR LIYLA LAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRRLLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDTYDDDLDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFE EVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IK KGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIE EGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS KLVSDF RKDFQFYKVINNYHHAHDAYLNAVVG TALIKKYPKLESEFVYGD YKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKVEKG KSKKLKSVKELLGITIMERSSSF EKNPIDFLEAKGYKEVKKDLI IKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN</p>

		<p>KHRDKPIREQAENIIHLFTLTNLGAPAAAFKYFDTTIDRKRYTSTKEVL DATLIHQSITEGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GRTLVTFKDVFVDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGMVAGMLGLRE EKSEDQDLQGLKDKPLKFKKVKKDKKEEKEGKHEPVQPSAHHSAEP AEAGKAETSESGSAPAVPEASASPKQRRSIIRDRGPMYDDPTLPEG WTRKLKQRKSGRSAGKYDVYLINPQGKAFRSKVELIAYFEKVGDT LDPNDFDFTVTGRGSPSRREQPPKKPKSPKAPGTGRGRGRPKGSGT TRPKAATSEGVQVKRVLEKSPGKLLVKMPFQTSPGGKAEGGGATTS TQVMVIKRPGRKRKAADPQAIPKKRGRKPGSVVAAAAAEAKKKA VKESSIRSVQETVLPKIKRKTRETVSIEVKEVVKPLLSTLGEKSGKG LKTCKSPGRKSKESSPKGRSSSASSPPKKEHHHHHHHSESPKAPVPLL PPLPPPPPEPESSEDPTSPPEPQDLSSSVCKEEKMPRGGSLESDGCPKE PAKTQPAVATAATAAEKYKHRGEGERKDIVSSSMRPNREEPVDSR TPVTERVS</p>
1015	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-Kap1	<p>MNHDQEFDPKVPVPPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLHHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAQL QLSKDITYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KILQTVKVVDLKVVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKREINNYHHAHDAYLNAVVGTA LIKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKVEKG KSKKLKSVKELLGITIMERSSEFKNPIDFLEAKGYKEVKKDLIIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLG</p>

		<p>SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVLADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKEYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GRTLVTFKDVFVDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGMAASAAAASA AAASAASGSPGPGEGSAGGEKRSTAPSAAASASASAAASSPAGGGA EAEELLEHCGVCRERLRPEREPRLLPCLHSACSACLGPAPAAAANSS GDGGAAGDGTVVDCPVCKQQCFSKDIVENYFMRDSGSKAATDAQD ANQCCTSCEDNAPATSYCVECSEPLCETCVEAHQRVKYTKDHTVRS TGPAKSRDGERTVYCNVHKHEPLVLFCESCDTLTCRDCQLNAHKDH QYQFLEDAVRNQRKLLASLVKRLGDKHATLQKSTKEVRSSIRQVSD VQKRVQVDVKMAILQIMKELNKRGRVLVND AQKVTEGQQRERLERQ HWTMTKI QKHQEHILRFASWALESDNNTALLSKKLIYFQLHRALK MIVDPVEPHGEMKFQWDLNAWTKSAEAFGKIVAERP GTNSTGPAP MAPPRAPGPLSKQGS GSSQPM EVQEGYGFSGDDPYSSAEPHVSGV KRSRSGEGEVSGLMRKVPRVSLERLDLDTADSQPPVFKVFPGSTTE DYNLIVIERGAAAAATGQPGTAPAGTPGAPPLAGMAIVKEEETAAI GAPPTATEGPETKPVLMALAEGPGAEGPRLASPSGSTSSGLEVV APE GTSAPGGGPGTLD DSATICRVCQKPGDLVMCNQCEFCFHL DCHLPA LQDVPGE EWSCSLCHVLPDLKEEDGSLSLDGADSTGVVAKLSPANQ RKCERVLLALFCH EPCRPLHQLATDSTFSLDQPGGTLDLTLIRARLQE KLSPPYSSPQEFAQDVGRMFKQFNKLTEDKADVQSIIGLQRFFETRM NEAFGDTKFS AVLVEPPPMSLPGAGLSSQELSGGPGDGP</p>
1016	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-HP1a	<p>MNHDQEFDP PKVYPPVPAEK RKP IRVLSLFDGIATGLLV LKDLGIQV DRYIASEVCEDSITVGMVRHQ GKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLESNPVMIDAKEVSA AHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQ GK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPM EIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFWFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQ NAMRVWSNIPGLKSKHAPLTPKEEEYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEP KKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFS NEMAKVDDSFHRL EESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLA LAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRRL ENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFY PFLKDNREKIEKILTFRIPYVGP LARGNSRFAWMTRKSEETITPWNFE EVVDKGASAQSFIERMTNFDK NLPNEKVL PKHSLLYEYFTVYNELTKVKYVTEGM RKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDL LKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNF MQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IK KGILQTVKVVD ELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE</p>

		<p> EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVVREINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGD YKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIEQISEFSKRVLADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSIITGLYETRIDLSQLGGDPKKKRKVSGETPGTSESATPEST GRTLVTFKDVFDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEEPTSEPSAPGTSTEPSETGMGKKTARTAD SSSEDEEEYVVEKVLDRRVVKGQVEYLLKWKGFEHNTWEPEKN LDCPELISEFMKKYKKMKKEGENNKPRESKSNRKSNSNSADDIKS KKKREQSNDIARGFERGLEPEKIIGATDSCGDLMLMKWKGTDEAD LVLAKEANVKCPQIVIAFYEERLTWHAYPEDAENKEKETAKS </p>
1017	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-HP1b	<p> MNHDQEFDPKVPYPPVPAEKRPVRLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQKIMYVGDVRSVTQKHIEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLHLDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRILIYLAHAMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRRLLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDITYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIK KGILQTVKVVDLVLKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVVREINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGD YKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVLSPQVNVIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG </p>

		<p>KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKKRK VSGSETPGTSESATPEST GRTLVTFKDVFVDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGMGKKQNKKK VEEVLEEEEEEEYVVEKVLDRRVVKGKVEYLLKWKGFSDDEDNTWEP EENLDCPDLIAEFLQSQKTAHETDKSEGGRKADSDSEDKGEESKPK KKKEESEKPRGFARGLEPERIIGATDSSGELMFLMKWKNSDEADLVP AKEANVKCPQVVISFYEERLTWHSYPSEDDDKKDDKN</p>
1018	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-EED	<p>MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVG D VRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDA KL QLSKD TYDDDLDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFE EVVDKGASAQSFIERMTNFDK NLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGM RKP AFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKDKDFLDNEENEDILEDIVLT LTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IK KGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIE EG I KELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS KLVSDF RKDFQFYK VREINNYHHAHDAYLNAVVG TALIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKVEKG KSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKKRK VSGSETPGTSESATPEST GRTLVTFKDVFVDFTREEWKLLDTAQQIVYRNVMLENYKNLVSLG</p>

		YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGMSEREVSTAPA GTDMPAAKKQKLSSDENSNDLSDGENDDAVSIESGTNTERPDTPTN TPNAPGRKSWGKWKWSKCKYSFKCVNSLKEDHNQPLFGVQFNW HSKEGDPLVFATVGSNRVTLYECHSQGEIRLLQSYVDADADENFYT CAWTYDSNTSHPLLAVAGSRGIIRINPITMQCIKHVGHGNAINELK FHPRDPNLLLSVSKDHALRLWNIQTDTLVAIFGGVEGHRDEVLSADY DLLGEKIMSCGMDHSLKLWRINSKRMMNAIKESYDYNPNKTNRPFI SQKIHFPDFSTRDIHRNYVDCVRWLGDLLSKSCENAIVCWKPGKME DDIDKIKPSESNTILGRFDYSQCDIWYMRFSMDFWQKMLALGNQV GKLYVWDLEVEDPHKAKCTTLTHHKCGAAIRQTSFSRDSSILIAVCD DASIWRWDRLR
1019	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB- RBBP4	MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLLQAQVRSRK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRRLLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLEPKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPPYYVGP LARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDK NLPNEKVLPHKSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTTLTFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KGILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSDF RKDFQFYKVVREINNYHHAHDAYLNAVVGTA LIKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYS VLVVAKEVG KSKKLKSVKELLGITIMERSSEFKNPIDFLEAKGYKEVKKDLI IKLPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHY EKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDK VLSAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYT STKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GRTLVTFKDVVDFDTREEWKLLDTAAQQIVYRNVMLENYKNL VSLG

		YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGMADKEAAFD AVEERVINEEYKIWKKNTPFLYDLVMTHALEWPSLTAQWLPDVTRP EGKDFSIHRLVLGTHTSDEQNHLVIASVQLPNDDAQFDASHYDSEKG EFGGFGSVSGKIEIEIKINHEGEVNRARYMPQNPCIIATKTPSSDVLV DYTKHPSKPDPSGECNPDRLRLRGHQKEGYGLSWNPNLSGHLLSASD DHTICLWDISAVPKEGKVVDKTIFTGHTAVVEDVSWHLLHESLFGS VADDQKLMIWDTRSNNSTSKPSHSVDAHTAEVNCLSFNPYSEFILATG SADKTVALWDLRNLKLKLSHFESHKDEIFQVQWSPHNETILASSGTD RRLNVWDLISKIGEEQSPEDAEDGPPELLFIHGGHTAKISDFSWNPNP WVICSVSEDNIMQVWQMAENIYNDEDPEGSVDPEGQGS
1020	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB- RCOR1	MNHDQEFDPKVPYPPVPAEKRKPIRVLSLFDGIATGLLVKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYLYLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDITYDDDLNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA KKGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSE EVLKMKKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSD RKDFQFYKVRINNYHHAHDAYLNAVVGTA LIKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEKG KSKKLKSVKELLGITIMERSSEKPNIDFLEAKGYKEVKKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKYVSGSETPGTSESATPEST GRTLVTFKDVVDFDTREEWKLLDTAAQIVYRNVMLENYKNLVSLG YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGMPAMVEKGPE

		VSGKRRGRNNAASASAAAASAAASAACASPAATAASGAAASSAS AAAASAAAAPNNGQNKSLAAAAPNGNSSNSWEEGSSGSSSDEEHG GGGMRVGPQYQAVVPDFDPAKLARRSQERDNLGMLVWSPNQNLSE AKLDEYIAIAKEKHGYNMEQALGMLFWHKHNIKSLADLPNFTPFP DEWTVEDKVLFEQAFSFHKGKTFHRIQQMLPDKSIASLVKFYYSWKK TRTKTSVMDRHARKQKRERESEDELEEANGNNPIDIEVDQNKESK KEVPPTETVPQVKKEKHSTQAKNRAKRKPPKGMFLSQEDVEAVSAN ATAATTVLRQLDMELVSVKRQIQNIKQTNSALKEKLDGGIEPYRLPE VIQKCNRWTTTEEQLLAVQAIRKYGRDFQAISDVIGNKSVVQVKNFF VNYRRRFNIDEVLQEWEAEHGKEETNGPSNQKPVKSPDNSIKMPEEE DEAPVLDVRYASAS
1021	:DNMT3A/ L- dSpCas9- XTEN16- KOX1KR AB-EZH2	MNHDQEFDPKVPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSSLVPLSLRGS HMGPMIYKTVSAWKRPVRVLSLFRNIDKVLKSLGFLESGSGSGG GTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQPLGSSCDRCPGWYM FQFHRILQYALPRQESQRPFFWIFMDNLLLTEDDQETTTRFLQTEAVT LQDVRGRDYQNAMRVWSNIPGLKSKHAPLTPKEEYQLQAQVRSRSK LDAPKVDLLVKNCLLPLREYFKYFSQNSLPLGGPSSGAPPPSGGSPAG SPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPS EGSAPGTSTEPSEPKKRKVYMDKKYSIGLAIGTNSVGWAVITDEYK VPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYT RRKNRICYLQEIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGN IVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHF LIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARL SKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKL QLSKDITYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTE ITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQSKNG YAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTF DNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPPYYVGP LARGNSRFAWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDK NLPNEKVLPHKSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKK AIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAH LFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDG FANRNFMLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIK KGILQTVKVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRER MKRIEELGKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQ ELDINRLSDYDVAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNPSE EVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKR QLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSDF RKDFQFYKVVREINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGD YKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRK RPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFS KESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKVEKG KSKKLKSVKELLGITIMERSSEFKNPIDFLEAKGYKEVKDLIILPKY SLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLG SPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVILADANLDKVL SAYN KHRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKRKVSGSETPGTSESATPEST GRTLVTFKDVVDFDTREEWKLLDTAQQIVYRNVMLENYKNLVSLG

		YQLTKPDVILRLEKGEEPSTEPSEGSAPGTSTEPSETGMGQTGKKSEK GPVCWRKRVKSEYMRLRQLKRFRRRADEVKSMFSSNRQKILERTEIL NQEWKQRRIQPVHILTSVSSLRGTRECSVTSDLDFPTQVIPLKTLNAV ASVPIMYSWSPLQQNFMVEDETVLHNIPYMGDEVLDQDGTFFIEELIK NYDGKVHGDRECGFINDEIFVELVNALGQYNDDDDDDDDGDDPEERE EKQKDLEDHRDDKESRPPRKFPSDKIFEAISSMFPDKGTAEELKEKY KELTEQQLPGALPPECTPNIDGPNASVQREQSLHSFHTLFCRRCFKY DCFLHPFHATPNTYKRKNTETALDNKPCGPQCYQHLEGAKEFAAAL TAERIKTPPKRPGGRRRGRLPNSSRPSTPTINVLESKDTSDREAGT ETGGENNDKEEEEKKDETSSSSEANSRCQTPIKMKPNIEPPENVEWS GAEASMFRVLIGTYYDNFCAIARLIGTKTCRQVYEFVKESSIIAPAP AEDVDTPPRKKKRKHRLWAAHCRKIQLKKGSSNHVYNYQPCDHP RQPCDSSCPCVIAQNFCEKFCQCSSECQNRFPGCRCKAQCNTKQCPC YLAVRECDPDLCLTCGAADHWDSKNVSCKNCSIQRGSKKHLLLAPS DVAGWGIFIKDPVQKNEFISEYCGEISQDEADRRGKVYDKYMCNFL FNLNDFVVDATRKGNKIRFANHVSVPNCYAKVMMVNGDHRIGIF AKRAIQTGEELFFDYRYSQADALKYVGIEREMEIP
1022	Cas-ZIM3	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSAAILSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVD LVKVMGRHHPENIVIEARENQTTQKGQKNSRERMKRIEELIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKKNYWRQ LLNAKLITQRKFDNLTKAERGGSELDAKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLEFENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMNNSQGRVTFEDVTVNFTQGEWQRLNPEQRNLYRDVMLENYSN LVSVGQGETTKPDVILRLEQKGEPWLEEEVVLGSGRAEKNGDIGGQI WKPKDVKESL
1023	Cas-ZNF554	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS

		<p>DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSSEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDGD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKRKRVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMFSQEERMAAGYLPRWSQELVTFEDVSMDFSQEEWELLEPAQK NLYREVMLENYRNVVSLEALKNQCTDVGIKEGPLSPAQTSQVTSLS WTGYLLFQPVASSHLEQREALWIEKGTQASCSDWMTVLRNQDST YKKVALQE</p>
1024	Cas- ZNF264	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLV DSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSSEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDGD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI</p>

		<p>ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RD KPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMAAAVLTDRAQVSVTFFDDVAVTFTKEEWGQLDLAQR TLYQEV MLENCGLLVSLGCPV PKAELICHLEHGQEPWTRKEDLSQDTC PGDK GKPKTTTEPTTCEPALSE</p>
1025	Cas- ZNF354A	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLV DSTDKADLR LIYLA LAHMIKFRGHFLIEGDLNPDNS DVDKLFQ L VQTYNQLFEENPINASGVDAKAILSARLSKSRRL ENLIA QLPGEKKNGLFGNLIALSLGLTPNFKS NFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFE EVVDKGAS AQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKD KD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKS DGFANRNF MQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKVVDE LVKVMGRHKPENIVIE MARENQTTQKGQKNSRERMKRIEEG IKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKS KLVSDFRKDFQFYK VREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYG DYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RD KPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMAAGQREAR PQVSLTFEDVAVL FTRDEWRKLAPSQRNLYRDVM LENYRNLVSLGLPFTKPKVISLLQQGEDPWEVEKD GSGVSSLGSKSS HKTTKSTQTQDSSFQ</p>
1026	Cas- ZNF324	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLV DSTDKADLR LIYLA LAHMIKFRGHFLIEGDLNPDNS DVDKLFQ L VQTYNQLFEENPINASGVDAKAILSARLSKSRRL ENLIA QLPGEKKNGLFGNLIALSLGLTPNFKS NFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFE EVVDKGAS AQSFIERMTNFDKNLPNEKVLPKH</p>

		<p> SLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDQD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVRIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVDVVRKMIAK SEQEI GKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSEFEKNPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMAFEDVAVYFSQEEWGLLDTAQRALYRRVMLDNFALVASLGLS TSRPRVVIQLERGEEPWVPSGTDTTLSRTTYRRRNPGSWSLTEDRDV SG </p>
1027	Cas-ZFP28	<p> MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLV DSTDKADRLRIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLI QLPGEKKNGLFGNLIALLSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSAMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDK GASAQSFIERMTNFDKNLPNEKVLPKH SLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDQD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVRIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVDVVRKMIAK SEQEI GKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSEFEKNPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE </p>

		TGNKKLEAVGTGIEPKAMSQGLVTFGDVAVDFSQEEWEWLNPIQRN LYRKVMLENYRNLASLGLCVSKPDVISSLEQGKEPW
1028	Cas-ZN627	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLEFENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLIHQSTGLYE TRIDLSQLGGDPKKKRKVGPGSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGSTEPSE TGDSVAFEDVAVNFTLEEWALLDPSQKNLYRDVMMRETFRNLASVG KQWEDQNIEDPFKIPRRNISHIPERLCESKEGGQGE
1029	Cas-ZN793	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA

		<p>QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGIEYQIPVSFKDVVVGFTQEEWHRLSPAQRALYRDVMLETYSNLVS VGYEGTKPDVILRLEQEEAPWIGEAAACPGCHCWED</p>
1030	Cas-ZN736	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLIA QLPGEKKNGLFGNLIALLSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLEPKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDK GASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLT LFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDL LVKVMGRHHPENIVIE MARENQTTQKGQKNSRERMKRIEIGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGGVLTFRDVAVEFSPEEWECLDSAQQRLYRDVMLENYGNLVSLGL AIFKPDLMTCLEQRKEPWVKVRQEAVAKHPAGSFHF</p>
1031	Cas-ZN577	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLIA QLPGEKKNGLFGNLIALLSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLEPKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL</p>

		<p>GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKKGSKKLKSVKELLG ITIMERSSEKKNPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGNATIVMSVRREQSSSGEGLSFEDVAVGFTREEWQFLDQSQKVL YKEVMLENYINLVSIGYRGTKPDSLFLKEQGEPPG</p>
1032	Cas-SUMO1	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLV DSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKKGSKKLKSVKELLG ITIMERSSEKKNPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE</p>

		TGEGEYIKLKVIGQDSSEIHFKVKMTTHLKKLKESYQCRQGVPMNSL RFLFEGQRIADNHTPKELGMEEDVIEVYQEQTGG
1033	Cas-SUMO3	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEAMARENQTTQKGQKNSRERMKRIEELIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVAKVEKGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLEFENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQITGLYE TRIDLSQLGGDPKKKRKVGPGSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGSTEPSE TGENDHINLKVAGQDGSVVQFKIKRHTPLSKLMKAYCERQGLSMRQ IRFRFDGQPINETDTPAQLEMEDEDTIDVFQQQTGG
1034	Cas-MPP8	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEAMARENQTTQKGQKNSRERMKRIEELIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA

		<p>QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGAEAFGDSEEDGEDVFEVEKILDMKTEGGKVL YKVRWKGYTSDD DTWEPEIHLEDCKEVLLEFRKKIAENKAKAVRKDIQR</p>
1035	Cas-RYBP	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLI QLPGEKKNGLFGNLIASLGLTPNFKS NFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSAMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTTLTFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVD LVKVMGRHHPENIVIE MARENQTTQKGQKNSRERMKRIE EGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGPSEANSIQSANATTKTSETNHTSRPRLKNVDRSTAQQLAVTVGNV TVIITDFKEKTRSSSTSSSTVTSSAGSEQQNQSSS</p>
1036	Cas-YAF2	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLI QLPGEKKNGLFGNLIASLGLTPNFKS NFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSAMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL</p>

		<p>GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIAMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGKDKVEKEKSEKETTSKKNSHKKTRPRLKNVDRSSAQHLEVTVGDL TVIITDFKEKTKSPPASSAASADQHSQSGSSSDNT</p>
1037	Cas-SUMO5	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSAMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIAMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE</p>

		TGKDEDIKLRVIGQDSSEIHFKVKMTTPLKKLKSSYQCRQGVVNSL RFLFEGQRIADNHTPEELGMEEDVIEVYQEIQIGG
1038	Cas-CBX4	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSLLVSDFRKDFQFYKVIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVAKVEKGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQITGLYE TRIDLSQLGGDPKKKRKVGPGSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGSTEPSE TGRSEAGEPPSSLQVKPETPASAAVAVAAAAAPTTTAEKPPAEAQDE PAESLSEFKPFFGNIIITDVTANCLTVTFKEYYTV
1039	Cas-PCGF2	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA

		<p>QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGHRTTRIKITELNPHLMCALCGGYFIDATTIVECLHSFCKTCIVRYLE TNKYCPMCDVQVHKTRPLLSIRSDKTLQDIVYK</p>
1040	Cas-CDY2	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDL LVKVMGRHHPENIVIE MARENQTTQKGQKNSRERMKRIE EGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGSEL DKAAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGASQEFVEAIVDKRQDKNGNTQYLVRWKGYDKQDDTWEPEQHL MNCEKCVHDFNRRQTEKQKKLTWTTTSRIFSNNARRR</p>
1041	Cas-CDYL2	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL</p>

		<p>GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGASGDLYEVERIVDKRKNKKGKWEYLIRWKGYGSTEDTWEPEHH LLHCEEFIDEFNLHMSKDKRIKSGKQSSTSKLLRDS</p>
1042	Cas- HERC2	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSAMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE</p>

		TGTLIRKADLENHKNKDGGFWTVIDGKVYDIKDFQTQSLTGNSILAQF AGEDPVVALEAALQFEDTRESMHAFVCVGQYLEPDQ
1043	Cas-ID2	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAQLQSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSLLVSDFRKDFQFYKVIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVAKVEKGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKKRKVGPGSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGSTEPSE TGSDHSLGISRSKTPVDDPMSLLYNMNDCYSKLKLVPISIPQNKKVS KMEILQHVIDYILDQLALDSHPTIVSLHHQRPGQ
1044	Cas-TOX	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAQLQSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA

		<p>QILDSRMNTKYDENDKLIREVKVITLKSKLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGKDPNEPQKPVSAYALFFRDTQAAIKGQNP NATFGEVSKIVASMW DGLGEEQKQVYKKKTEAAKKEYLKQLAAYRASLVSK</p>
1045	Cas-SCMH1	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKS NFDLAEDA KLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFE EVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNF MQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKV VDE LVKVMGRHHPENIVIE MARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSKLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGDASRLSGRDPSSWTVEDVMQFVREADPQLGPHADLFRKHEIDGK ALLLLRSDMMM KYMGLKLGPALKLSYHIDRLKQGGKF</p>
1046	Cas-CBX7	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKS NFDLAEDA KLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL</p>

		<p>GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVRIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVDVVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGGKSKKLKSVKELLG ITIMERSSEKKNPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGELSAIGE QVFAVESIRKKRVRKGKVEYL VKWKGWPPKYSTWEPE EHILDPRLVMAYEEKEERDRASGYRKRGP KPKRLLL</p>
1047	Cas-ID1	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSAMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVRIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVDVVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGGKSKKLKSVKELLG ITIMERSSEKKNPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE</p>

		TGGGAGARLPALLDEQQVNVLLYDMNGCYSRLKELVPTLPQNRKV SKVEILQHVIDYIRDLQLELNSESEVGTGGRGLPVR
1048	Cas-CREM	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLEFENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLIHQSTGLYE TRIDLSQLGGDPKKKRKVGPGSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGVVMAASPGSLHSPQQLAEEATRKRELRLMKNREAAKECRRRKK EYVKCLESRAVAVLEVQNKKLIEELETLKDICSPTDY
1049	Cas-SCX	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA

		<p>QILDSRMNTKYDENDKLIREVKVITLKSKLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RDKPIREQAEN IIHLFTLTNLGAPAAF KYFDTTIDRKRYTSTKEVLDATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGGGGPGGRPGREPRQRHTANARERDRTNSVNTAFTALRTLIPTEPA DRKLSKIETLRLASSYISHLGNVLLAGEACGDGQP</p>
1050	Cas- ASCL1	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFE EVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIKDKD FLDNEENEDILEDIVLTLT LFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNF MQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKV VDE LVKVMGRHHPENIVIE MARENQTTQKGQKNSRERMKRIE EGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSKLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RDKPIREQAEN IIHLFTLTNLGAPAAF KYFDTTIDRKRYTSTKEVLDATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGSGFGYSLPQQQPA AVARRNERERNRVKLVNLGFATLREHVPNGA ANKKMSKVETLRS AVEYIRALQQLLDEHDAVSAAFQ</p>
1051	Cas- SCML2	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL</p>

		<p>GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLEFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGKQGFSKDPSTWSVDEVIQFMKHTDPQISGPLADLFRQHEIDGKAL FLKSDVMMKYMGLKLGPALKLCYYIEKLKEGKYS</p>
1052	Cas-TWST1	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSAMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLEFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE</p>

		TGSGGGSPQSYEELQTQRVMANVRERQRTQSLNEAFAALRKIIPTLP SDKLSKIQTCLKLAARYIDFLYQVLQSDDELDSKMAS
1053	Cas- CREB1	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQVLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEAMARENQTTQKGQKNSRERMKRIEELIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSLLVSDFRKDFQFYKVIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNVKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVAKVEKGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQITGLYE TRIDLSQLGGDPKKRKVGPGSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGSTEPSE TGIAPGVVMASSPALPTQPAEEAARKREVRLMKNREAARECRRKKK EYVKLENRVAVLENQNKTLIEELKALKDLYCHKSD
1054	Cas- TERF1	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQVLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEAMARENQTTQKGQKNSRERMKRIEELIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA

		<p>QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKKGSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGSRIPVSKSQPVTPEKHRARKRQAWLWEEDKNLRSQVRKYGEGN WSKILLHYKFNNRTSVMLKDRWRTMKKLKLISDSED</p>
1055	Cas-ID3	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLI QLPGEKKNGLFGNLIALLSLGLTPNFKSNDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVD LVKVMGRHHPENIVEMARENQTTQKGQKNSRERMKRIEIGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKKGSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGSLAIARGRGKGPAAEEPLSLDDMNHCSRLREL VPGVPRGTQLS QVEILQRVIDYILDQVVLAEAPAPGPPDGPHLPQ</p>
1056	Cas-CBX8	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLI QLPGEKKNGLFGNLIALLSLGLTPNFKSNDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL</p>

		<p>GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVRIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGGSGPPSSGGGLYRDMGAQGGRP SLIARIPVARILGDPEEESWSPSL TNLEKVVVTDVTSNFLTVTIKESNTDQGFFKEKR</p>
1057	Cas-CBX4	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVRIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE</p>

		TGELPAVGEHVFAVESIEKKRIRKGRVEYLVKWRGWSPKYNTWEPE ENILDPRLLIAFQNRERQEQLMGYRKRGPKPKPLVV
1058	Cas-GSX1	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEDIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLEFENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKKRKVGPGSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGVDSSSNQLPSSKRMRTAFTSTQLLELEREFASNMYLSRLRRIEAT YLNLSKQVKIWFQNRVRKHKKKEGKGSNHRGGGG
1059	Cas-NKX22	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEDIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA

		<p>QILDSRMNTKYDENDKLIREVKVITLKSKLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RDKPIREQAEN IIHLFTLTNLGAPAAF KYFDTTIDRKRYTSTKEVLDATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGTPGGGGDAGKKRRRVLF SKAQTYELERRFRQQRYLSAPER EHL ASLIRLTPTQVKIWFQNHRYKMKRARA EKGMEVTPL</p>
1060	Cas-ATF1	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRL ENLIA QLPGEKKNGLFGNLI ALSGLTPNFKS NFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFE EVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNF MQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKV VDE LVKVMGRHHPENIVIE MARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSKLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RDKPIREQAEN IIHLFTLTNLGAPAAF KYFDTTIDRKRYTSTKEVLDATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGQTVVMTSPVTLTSQTTKTDDPQLKREIRLMKNREAARECRRKKK EYVKCLENRVAVLENQNKTLIEELKTLKDLYSNKS V</p>
1061	Cas-TWST2	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRL ENLIA QLPGEKKNGLFGNLI ALSGLTPNFKS NFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL</p>

		<p>GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGKGSPSAQSFEELQSQRILANVRERQRTQSLNEAFAALRKIIPTLPSD KLSKIQTLKLAARYIDFLYQVLQSDMDNKMST</p>
1062	Cas-TOX3	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE</p>

		TGKDPNEPQKPVSAYALFFRDTQAAIKGQNP NATFGEVSKIVASMW DSLGEQKQVYKRKTEAAKKEYLKALAA YRASLVSK
1063	Cas-TOX4	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFE EVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNF MQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKV VDE LVKVMGRHKPENIVIE MARENQTTQKGQKNSRERMKRIE EGikelGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEE VVKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKS KLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYG DYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVA KVEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLI IKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGS PEDNEQKQLFVE QHKHYLDEIIEQISEFSKR VILADANLDKVL SAYNKH RDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGKDPNEPQKPVSAYALFFRDTQAAIKGQNP NATFGEVSKIVASMW DSLGEQKQVYKRKTEAAKKEYLKALAA YKDNQECQ
1064	Cas-ZMYM3	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFE EVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT YHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNF MQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKV VDE LVKVMGRHKPENIVIE MARENQTTQKGQKNSRERMKRIE EGikelGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEE VVKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA

		<p>QILDSRMNTKYDENDKLIREVKVITLKSKLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLI IKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RDKPIREQAEN IIHLFTLTNLGAPAAF KYFDTTIDRKRYTSTKEVLDATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGLDGSTWDFCSEDCSKYLLWYCKAARCHACKRQGK LLETIHWR GQIRHFCNQQLRFYSQQNQPNLDTQSGPESLLNSQ</p>
1065	Cas-I2BP1	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFE EVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNF MQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKV VDE LVKVMGRHHPENIVIE MARENQTTQKGQKNSRERMKRIE EGikelGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSKLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLI IKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RDKPIREQAEN IIHLFTLTNLGAPAAF KYFDTTIDRKRYTSTKEVLDATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGASVQASRRQWCYLC DLPKMPWAMVWDFSEAVCRGCVNFEGAD RIELLID AARQLKRSHVLPEGRSPGPPALKHPATKDLA</p>
1066	Cas-RHXF1	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL</p>

		<p>GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMEGPQPENMQPRTRTKFTLLQVEELESVFRHTQYDPVPTRELA ENLGVTEDKVRVWFKNKRARCRRHQRELMLANELR</p>
1067	Cas-SSX2	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSAMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE</p>

		TGPKIMPKKPAEEGNDSEEVPEASGPQNDGKELCPPGKPTTSEKIHER SGPKRGEHAWTHRLRERKQLVIYEEISDPEEDDE
1068	Cas-I2BPL	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLIHQSTGLYE TRIDLSQLGGDPKKKRKVGPGSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGSAQVSSSRQSCYLCDLPRMPWAMIWDFSEPVCRCVCVNYEGA DRIEFVIETARQLKRAHGCFQDGRSPGPPPPVGVKTV
1069	Cas-CBX1	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA

		<p>QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKRKRVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGNKKKVEEVLEEEEEYYVEKVLDRRVVKGKVEYLLKWKGFSD DNTWEPEENLDCPDLIAEFLQSQKTAHETDKSEGGKR</p>
1070	Cas-TRI68	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLI QLPGEKKNGLFGNLIASLGLTPNFKSNDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIKDKD FLDNEENEDILEDIVLTLT LFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVD LVKVMGRHHPENIVIE MARENQTTQKGQKNSRERMKRIEIGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKRKRVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGLANVVEKVRLLRLHPGMGLKGDLCERHGEKLMFCKEDVLIMC EACSQSPEHEAHSVVPME DVAWEYKWELHEALEHLKK</p>
1071	Cas-HXA13	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLI QLPGEKKNGLFGNLIASLGLTPNFKSNDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL</p>

		<p>GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLPTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDQD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVRIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVDVVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLEFENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGVVSHPSDASSYRRGRKKRVPYTKVQLKELEREYATNKFITKDKR RRISATTNLSERQVTIWFQNRVRVKEKKVINKLKTTS</p>
1072	Cas-PHC3	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSAMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLPTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDQD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVRIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVDVVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLEFENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE</p>

		TGENSDLLPVAQTEPSIWTVDDVWAFIHSLPGCQDIADEFRAQEIDG QALLLLKEDHLM SAMNIKLGPALKICARINSLKES
1073	Cas-TCF24	MGTPKKKRKVM DKKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGAS AQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIE MARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKS KLVSDFRKDFQFYKVIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLI IKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGS PEDNEQKQLFVE QHKHYLDEIIEQISEFSKR VILADANLDKVL SAYNKH RDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGAGPGGGSRSRSGSRPAAANAARERSRVQTLRHAFLELQRTLPSVPP DTKLSKLDVLLLATTYIAHLTRSLQDDAEAPADAG
1074	Cas-HXB13	MGTPKKKRKVM DKKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGAS AQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIE MARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA

		<p>QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSEFKNPIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGQHPPDACAFRRGRKKRIPYSKGQLRELEREYAANKFITKDKRRI SAATSLSERQITIWFQNRVRKEKKVLAKVKNSATP</p>
1075	Cas-HEY1	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIKDKD FLDNEENEDILEDIVLTLT LFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVD LVKVMGRHHPENIVIE MARENQTTQKGQKNSRERMKRIEIGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSEFKNPIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGSMSPTTSSQILARKRRRGIIKRRRRDRINNSLSELRLVPSAFEKQG SAKLEKAEILQMTVDHLKMLHTAGGKGYFDAHA</p>
1076	Cas-PHC2	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL</p>

		<p>GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTIAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVRIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKGGKSKKLKSVKELLG ITIMERSSEKKNPIDFLEAKGYKEVKKDLIIKLPKYSLEFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGLVGMGHHFLPSEPTKWNVEDVYEFIRSLPGCQEIAEEFRAQEIDG QALLLLKEDHLSAMNIKLGPALKIYARISMLKDS</p>
1077	Cas- FIGLA	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSAMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTIAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVRIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKGGKSKKLKSVKELLG ITIMERSSEKKNPIDFLEAKGYKEVKKDLIIKLPKYSLEFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE</p>

		TGGYSSTENLQLVLERRRVANAKERERIKNLNRGFARLKALVPFLPQ SRKPSKVDILKGATEYIQVLSDLLEGAKDSKKQDP
1078	Cas- SetDB1	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALLSLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEFYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDL LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKQQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVAKVEKGKSKKLKSVKELLG ITIMERSSEFKNPIDFLEAKGYKEVKKDLIIKLPKYSLEFENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGSTEPSE TGMSSLPGCIGLDAATATVESEEIAELQQAVVEELGISMEELRHFIDE ELEKMDCVQQRKKQLAELETWVIQKESEVAHVVDQLFDDASRAVTN CESLVKDFYSKLGLQYRDSSSEDESSRPTIIEIPDEDDVLSIDSGDA GSRTPKDQKLREAMAALRKSAQDVQKFMDAVNKKSSSQDLHKGTL SQMSGELSKDGLIVSMRILGKKRTKTWHKGTLIAIQTVGPGKKYK VKFDNKGKSLLSGNHIAIDYHPPADKLYVGSRVVAKYKDGNGQVWL YAGIVAETPNVKNKLRFLIFFDDGYASYVTQSELYPICRPLKKTWEDI EDISCRDFIEEYVTAYPNRPMVLLKSGQLIKTEWEGTWWKSRVEEV DGSLVRILFLDDKRCEWIYRGSTRLEPMFSMKTSSASALEKKQGQLR TRPNMGAVRSKGPVVQYTQDLTGTGTQFKPVEPPQPTAPPAPPFPPA PPLSPQAGDSDLESQLAQSRKQVAKKSTSFPRGSGVSGHSSPTSPALS ENVSGGKPGINQTYRSPLGSTASAPAPSALPAPPAPPVFHGMLEPAPA EPSYRAPMEKLFYLPVHCSYTCLSRVRPMRNEQYRGKNPLLVPLLY DFRRMTARRRVNRKMGFHVYIKTPCGLCLRTMQEIERYLFETGCDL LFLEMFCCLDPYVLVDRKFQPYKPFYYILDITYGKEDVPLSCVNEIDTT PPPQVAYSERIPGKGVFINTGPEFLVGCDCKDGCRDKSKCACHQLT IQATACTPGGQINPNSGYQYKRLEECLPTGVYECNKRCKCDPNMCT NRLVQHGLQVRLQLFKTQNKGWGIRCLDDIAKGSFVCIYAGKILTD DFADKEGLEMGDEYFANLDHIESVENFKEGYESDAPCSSDSSGVDLK DQEDGNSGTEDPEESNDDSSDDNFCKDEDFSTSSVWRSYATRRQTR GQKENGLSETTSKDSHPPDLGPPHIPVPPSIPVGGCNPSSSEETPKNKV ASWLSCNVSSEGGFADSDSHSSFKTNEGGEGRAGGSRMEAEKASTS

		GLGIKDEGDIKQAKKEDTDDRNMKMSVVTESSRNYGYNPSPVKPEGL RRPPSKTSMHQSRRLMASAQSNPDDVLTLSSTESEGESGTSRKPTA GQTSATAVDSDDIQTISGSEGDDFEDKKNMTGPMKRQVAVKSTRG FALKSTHGIAIKSTNMASVDKGESAPVRKNTRQFYDGEESCYIIDAKL EGNLGRYLNHSCSPNLFVQNVFVDTHDLRFPWVAFFASKRIRAGTEL TWDYNYEVGSVEGKELLCCCGAIECRGRL
1079	Cas-MBD1	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPHIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVKDLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALLSLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTTLTFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEKGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDENEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMAEDWLDPCALGPGWKRRE VFRKSGATCGRSDTYYSPTGDRI RSKVELTRYLGPACDLTLFDFKQGILCYPAPKAHPVAVASKKRKKPS RPAKTRKRQVGPQSGEVRKEAPRDETKADTDTAPASFPAPGCCENC GISFSGDGTQRQRLKTLCKDCRAQRIAFNREQRMFKRVGCGECAAC QVTEDCGACSTCLLQLPHDVASGLFCKCERRRCLRIVERSRGCGVCR GCQTQEDCGHCPICLRPPRGLRRQWKCVQRRCLRGKHARRKGGC DSKMAARRRPGAQPLPPPPPSQSPEPTEPHPRALAPSPPAEFYCYVD EDELQPYTNRRQNRKCGACAACLRMDCGRCDFCCDKPKFGGSNQ KRQKCRWRQCLQFAMKRLPSVWSESEDGAGSPPPYRRRKRPSSAR RHHLGPTLKPTLATRTAQPDHTQAPTKQEAGGGFVLPPTGDLVFLR EGASSPVQVPGPVAASTEALLQEAQCSGLSWVVALPQVKQEKADTQ DEWTPGTAVLTSPVLVPGCPSKAVDPGLPSVKQEPDPEEDKEENKD DSASKLAPEEEAGGAGTPVITEIFSLGGTRFRDTAVWLPRSKDLKKP GARKQ
1080	Cas-MBD2	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPHIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS

		<p> DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDQV AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNVKKTETVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKRKRKVGPGSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMRAHPGGGRCCPEQEEGESAAAGGSGAGGDSAIEQGGQGSALAPS PVSGVRREGARGGGRGRGRWKQAGRGGGVCGRGRGRGRGRGRGR GRGRGRGRPPSGGSLGGDGGGCGGGGSGGGGAPRREPVPFPGSA GPGPRGRATESGKRMDCPALPPGWKKEEVIRKSGLSAGKSDVYYF SPSGKKFRSKPQLARYLGNTVDLSSFDFTGKMMPSKLQKNKQRLR NDPLNQNKGKPDNLNTLPIRQTASIFKQPVTKTNHPNSKVKSDPQR MNEQPRQLFWEKRLQGLSASDVTEQIIKTMELPKGLQGVGPGSNDE TLLSAVASALHTSSAPITGQVSAAVEKNPAVWLNTSQPLCKAFIVTD EDIRKQEERVQQVRKKLEELMADILSRAADTEEMDIEMDSGDEA </p>
1081	Cas-MBD3	<p> MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDQV AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKMKNYWRQ </p>

		LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMERKRWECPALPQGWEREVPRRSGLSAGHRDVFYSPSGKKFR SKPQLARYLGGMDLSTDFDRTGKMLMSKMNKSRQRVRYDSSNQV KGKPDNLNTALPVRQTASIFKQPVTKITNHPSNKKVSDPQKAVDQPRQ LFEKKLSGLNAFDIAEELVKTMDLPKGLQGVPCTDETLLSAIAS ALHTSTMPITGQLSAAVEKNPGVWLNTTQPLCKAFMVTDEDIRKQE ELVQQVRKRLEEALMADMLAHVEELARDGEAPL DKACAEDDDEED EEEEEEPPDPPEMEHV
1082	Cas-MBD4	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLI QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKS DGFANRNF MQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKV VDE LVKVMGRHKPENIVIE MARENQTTQKGQKNSRERMKRIE EGikelGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEE VVKMKKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMGTTGLESLSLGDGAAPT VTSSERLVPDPPNDLRKEDVAMELE RVGEDEEQMMIKRSSECNPLLQEPIAS AQFGATAGTECRKSVPCGWE RVVKQRLFGKTAGRFDVYFISPQGLKFRSKSSLANYLHKNGETSLKP EDFDFTVLSKRGISRYKDCSMAAL TSHLQNSNSNWNLRTRSKC KKDVFMPSSSSSELQESRGLSNFTSTHLLLKEDEGVDDVNFRKVRKP

		KGKVTILKGIPIKKTKKGCRKSCSGFVQSDSKRESVCNKADAESPEV AQKSQLDRTVCISDAGACGETLSVTSEENSLVKKKERSLSSGSNFCSE QKTSGIINKFCSAKDSEHNEKYEDTFLESEEIGTKVEVVERKEHLHTD ILKRGSEMDNNCSPTRKDFTGEKIFQEDTIPRTQIERRKTSLYFSSKYN KEALSPRRKAFKKWTPPRSPFNLVQETLFHDPWKLLIATIFLNRTSG KMAIPVLWKFLKYPSAEVARTADWRDVSELLKPLGLYDLRAKTIV KFSDEYLTQWKYPIELHGIGKYGNDSYRIFCVNEWKQVHPEDHKL NKYHDWLWENHEKLSLS
1083	Cas- MeCP2	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTIAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGSELDAKAGFIKRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLEFENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQITGLYE TRIDLSQLGGDPKKRKVGGPSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMVAGMLGLREEKSEDQDLQGLKDKPLKFKKVKDKKEEKEGK HEPVQPSAHHSAEPAEAGKAETSEGSGSAPAVPEASAPKQRRSIIRD RGPMYDDPTLPEGWTRKLKQRKSGRSAGKYDVYLINPQGKAFRSK VELIAYFEKVGDTSLDPNDFDFTVTGRGSPSRREQPPKPKPKSPKAPG TGRGRGRPKGSGTTRPKAATSEGVQVKRVLEKSPGKLLVKMPFQTS PGGKAEGGATTSTQVMVIKRPGRKRKAADPQAIPKKRGRKPGSV VAAAAAEAKKAVKESSIRSVQETVLPKIKRKTRETVSIEVKEVVKP LLVSTLGEKSGKGLKTCKSPGRKSKESSPKGRSSSASSPPKKEHHHH HHHSESPKAPVPLLPPLPPPPPEPESSEDPTSPPEPQDLSSSVCKEEKMP RGGSLSDGCPKEPAKTQPAVATAATAAEKYKHRGEGERKDIVSSS MPRPNREEPVDSRTPVERTVS
1084	Cas-Kap1	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA

		<p>QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVVDKGASQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVD LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEFIGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLEFENGKRKML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKRKRVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMAASAAAASAAAASAAASGSPGPGEGSAGGEKRSTAPSAAAASASA SAAASSPAGGGAEALELLEHCGVCRERLRPEREPRLLPCLHSACSAC LGPAAPAAANSSGDGGAAGDGTVDPCVCKQQCFKSDIVENYFMR DSGSKAATDAQDANQCCTSCEDNAPATSYCVECSEPLCETCVEAHQ RVKYTKDHTVRSTGPAKSRDGERTVYCNVHKHEPLVLFCESCDTLT CRDCQLNAHKDHQYQFLEDAVRNQRKLLASLVKRLGDKHATLQKS TKEVRSSIRQVSDVQKRVQVDVKMAILQIMKELNKRGRVLVND AQKVTEGQQRERLERQHWMTMTIKQKHQEHILRFASWALESNDNTALLS KKLIYFQLHRALKMIVDPVEPHGEMKFQWDLNAWTKSAEAFGKIVA ERPGTNSTGPAPMAPPRAPGPLSKQSGSSQPMEVQEGYGFSGDDP YSSAEPHVSGVKRSRSGEGEVSGLMRKVPRVSLERLDLDTADSQPP VFKVFPGSTTEDYNLIVIERGAAAAATGQPGTAPAGTPGAPPLAGMA IVKEEETEAAGAPPTATEGPETKPVLMALAEGPGAEGPRLASPSGST SSGLEVVAPGTSAPGGGPGTLDDSATICRVCKQKPGDLVMCNQCEFC FHLDCPLPALQDVPGEWSCSLCHVLPDLKEEDGSLSLDGADSTGV VAKLSPANQRKCERVLLALFCHEPCRPLHQLATDSTFSLDQPGGTLD LTLIRARLQEKLSPPYSSPQEFADVGRMFKQFNKLTEDKADVQSIIG LQRFFETRMNEAFGDTKFSAVLVEPPPMSPGAGLSSQELSGGPGDG P</p>
1085	Cas-HP1a	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDDTDKADRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW</p>

		MTRKSEETITPWNFEVVDKGASQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLEFLENKRKML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYE TRIDLSQLGGDPKKRKVGGPSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMGKKTARTADSSSEDEEEYVVEKVLDRRVVKGQVEYLLKWK FSEHNTWEPEKNLDCPELISEFMKKYKMKKEGENNKPREKSES RKSNSNSADDIKSKKKREQSNDIARGFERGLEPEKIIIGATDSCGDL FLMKWGTDEADLVLAKEANVKCPQIVIAFYERLTWHAYPEDAE NKEKETAKS
1086	Cas-HP1b	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSSTKADRLIYLALAHMIKFRGHFLIEGDLNPDNS DVKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSAAILSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYPPFLKDNREKIEKILTFRIPIYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLEFLENKRKML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYE

		TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMGKKQNKKKVEEVLEEEEEYYVEKVLDRRVVKGKVEYLLKW KGFSDDEDNTWEPEENLDCPDLIAEFLQSQKTAHETDKSEGGRKADSD DSEDKGEESKPKKKKEESEKPRGFARGLEPERIIGATDSSGELMFLM KWKNSDEADLVPAKEANVKCPQVVISFYEEERLTWHSYPSEDDDDKK DDKN
1087	Cas-HP1g	MGTPKKKRKVMDKKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVKDLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLEPKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMLIHD DSLTFKEDIQKAQVSGQDLSHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLRSDKNRGKSDNVPSEEVVKMKKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNVKKTQVQTTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGSKKLKSVMKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFYLYASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMASNKTTLQKMGGKQNGKSKKVEEAEPEEFVVEKVLDRRVVNG KVEYFLKWKGFTDADNTWEPEENLDCPELIEAFLNSQKAGKEKDGT KRKSLSDSESDSKSKKRDAADKPRGFARGLDPERIIGATDSSGEL MFLMKWKDSDEADLVLAKEANMKCPQIVIAFYEEERLTWHSPEDE AQ
1088	Cas-SetDB2	MGTPKKKRKVMDKKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVKDLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLEPKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR

		<p> KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVD LVKVMGRHHPENIVIEMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSLLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNVKKTVEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLEFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMGEKNGDAKTFWMELEDDGKVDFIFEQVQNVLQSLKQKIKDGS ATNKEYIQAMILVNEATIINSSTSIKASQKEVNAQSSDPMPVTQKEQ ENKSNAPSTSCENSFPEDCTFLT TENKEILSLEDKVVDFREKDSNNL SYQSHDCSGACLMKMPLNLKGENPLQLPIKCHFQRRHAKTNSHSSA LHVS YKTPCGRSLRNVEEVFRYLLETECNFLFTDNFSFNTYVQLARN YPKQKEVVSVDVDSNGVESVPISFCNEIDSRKLPQFKYRKTVWPRAY NLTNFSSMFTDSCDCSEGCIDITKCAQLTARNAKTSPLSSDKITTG YKYKRLQRQIPTGIYECSSLCKCNRQLCQNRVVQHGPQVRLQVFKT EQKGWGVRCDDIDRGTFVCIYSGRLLSRANTEKSYGIDENGRDENT MKNIFSKKRKLEVACSDCEVEVLPLGLETHPRTAKTEKCPPKFSNNP KELTVETKYDNISRIQYHSVIRDPESKTAIFQHNGKKMEFVSSESVTP EDNDGFKPPREHLNSKTGKAQKDSSSNHVDEFEDNLLIESDVIDITKY REETPPRSRCNQATTLDNQNIKKAIEVQIQKPQEGRSTACRQQVFC DEELLSETKNTSSDSLTKFNKGNVFLLDATKEGNVGRFLNHSCCPNL LVQNVFVETHNRNFPLVAFFTNRYVKARTELTWDYGYEAGTVPEKE IFCQCGVNKCRKKIL </p>
1089	Cas-SUV39H1	<p> MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFS NEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLNLI QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVD LVKVMGRHHPENIVIEMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA </p>

		<p>QILDSRMNTKYDENDKLIREVKVITLKSKLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEFEKNPIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RDKPIREQAEN IHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMAENLKGCSVCKSSWNQLQDLCRLAKLSCPALGISKRNLYDFE VEYLC DYKKIREQEYYLVKWRGYPDSESTWEPRQNLKCV RILKQFH KDLERELLRRHRSKTPRHLDPSLANYL VQKAKQRRALRRWEQELN AKRSHLGRITVENEVDLDGPPRA FVYINEYRVGEGITLNQVAVGCEC QDCLWAPTGGCCPGASLHKFAYNDQGGVRLRAGLP IYECNSRCRCG YDCPNRVVQKGIRYDLCIFRTDDGRGWGVRTLEKIRKNSFVMEYVG EITSEEAEERRGQIYDRQGATYLF DLDYVEDVYTVDAAYYGNISHFV NHSCDPNLQVYNVFIDNLDERLPRIAFFATRTIRAGEELTFDYNMQV DPVDMESTRMDSNFGLAGLP GSPKKRVRIECKCGTESCRKYL F</p>
1090	Cas- SUV39H1[H320R]	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFE EVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKS DGFANRNFMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKV VDE LVKVMGRHKPENIVIE MARENQTTQKGQKNSRERMKRIE EGikelGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEE VVKMKKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIK RQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSKLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEFEKNPIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RDKPIREQAEN IHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMAENLKGCSVCKSSWNQLQDLCRLAKLSCPALGISKRNLYDFE VEYLC DYKKIREQEYYLVKWRGYPDSESTWEPRQNLKCV RILKQFH KDLERELLRRHRSKTPRHLDPSLANYL VQKAKQRRALRRWEQELN AKRSHLGRITVENEVDLDGPPRA FVYINEYRVGEGITLNQVAVGCEC</p>

		QDCLWAPTGGCCPGASLHKFAYNDQGQVRLRAGLPIYECNSRCRCG YDCPNRVVQKGIRYDLCIFRTDDGRGWGVRTLEKIRKNSFVMEYVG EIITSEEAEERRGQIYDRQGATYLFDLDYVEDVYTVDAAYYGNISRFV NHSCDPNLQVYNVFIDNLDERLPRIAFFATRTRIRAGEELTFDYNMQV DPVDMESTRMDSNFGLAGLPGSPKKRVRIECKCGTESCRKYLF
1091	Cas- SUV39H2	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGAQAQSFIERMTNFDKNLPNEKVLPKH SLLYEFYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGSELDAKAGFIKQRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSLLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNVKKTVEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMAAVGAEGARGAWCVPCLVSLDTLQELCRKEKLTCKSIGITKRNL NNYEVEYLCDYKVVKDMEYYLVKWKGWPDSTNTWEPLQNLKCPL LLQQFSNDKHNYLSQVKKGKAITPKDNNKTLKPAIAEYIVKKAKQRI ALQRWQDELNRRKNHKGMIFFVENTVDLEGPPSDFYYINEYKPAPGIS LVNEATFGCSCTDCFFQKCCPAEAGVLLAYNKNQKIKPPGTPIYECN SRCQCGPDCPNRIVQKGTQYSLCIFRTSNGRGWGVKTLVKIKRMSFV MEYVGEVITSEEAEERRGQFYDNKGITYLFDLDYESDEFTVDAARYG NVSHFVNHSCDPNLQVFNVFIDNLDTRLPRIALFSTRITINAGEELTFD YQMKGSGDISSDSIDHSPAKKRVRTVCKCGAVTCRGYLN
1092	Cas- SUV420H1	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW

		MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDCK FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVIN NYHHAHDAYLNAVVGITALIKKYPKLESEFVYGDYKVDYVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKGSKKLKSVKELG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLEFENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFYFDTTIDRKRYTSTKEVL DATLIHQSTGLYE TRIDLSQLGGDPKKRKVGPGSSGAPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMKWLGESKNMVVNGRRNGGKLSNDHQNNQSKLQHTGKDTLKA GKNAVERRSNRCNGNSGFEGQSRYPSSGMSAKELCENDDLATSLV LDPYLGFTHKMNTSAFPSRSSRHFSKSDSFHNNPVRFRPIKGRQEE LKEVIERFKKDEHLEKAFKCLTSGEWARHYFLNKNMKQELFKEHV FIYLRMFATDSGFEILPCNRYSSSEQNGAKIVATKEWKRNDKIELLVG CIAELSEIEENMLLRHGENDFSVMYSTRKNCAQLWLGPAAFINHDCR PNCKFVSTGRDTACVKALRDIEPGEEISCYYGDGFFGENNEFCECYT CERRGTGAFKSRVGLPAPAPVINSKYGLRETDKRLNRLKKLGSSKN SDSQSVSSNTDADTTQEKNNATSNRKSSVGKKNKSKSRTLTRQSMS RIPASSNSTSSKLTHINNSRVPKKLKKPAKPLLSKIKLRNHCKRLEQK NASRKLEMGNLVLKEPKVVLKYNLPIKKDKEPEGPAQAAVASGCLT RHAAREHRQNPVRGAHSQGESSPCTYITRRSVRTRTNLKEASDIKLE PNTLNGYKSSVTEPCPDSGEQLQPAPVLQEEELAHETAQKGEAKCH KSDTGMSKKKSRQGKLVKQFAKIEESTPVHDSGPKDDAVPDLMGPH SDQGEHSGTVGVPVSYTDCAPSPVGCSVVTSDSFKTKDSFRTAKSKK KRRITRYDAQLILENNSGIPKLTLLRRRHDSSTKNDQENDGMNSSKIS IKLSKDHDNDNNLYVAKLNNGFNSGSGSSSTKLKIQKRDEENRGSY TEGLHENGVCSDPLSLLESRMEVDDYSQYEEESTDDSSSSSEGDEEE DDYDDDFEDDFIPLPPAKRLRLIVGKDSIDIDISSRRREDQSLRLNA
1093	Cas-SUV420H2	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLLESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQVLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDCK FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD

		<p> DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGITALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKRKVGSGPSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMGPDRVTARELCENDDLATSLVLDPYLGFRTHKMNVSPVPPLRR QQHLRSALETFLRQRDLEAAYRALTLGGWTARYFQSRGPRQEAALK THVYRYLRAFLPESGFTILPCTRYSMETNGAKIVSTRAWKKNEKLEL LVGCIAELREADEGLLRAGENDFSIMYSTRKRSAQLWLGPAAFINHD CKPNCKFVPADGNAACVKVLRDIEPGDEVTCFYGEGFFGEKNEHCE CHTCERKGEAFRTRPREPALPPRPLDKYQLRETKRRLQQGLDSGSR QGLLGPRACVHPSPLRRDPFCAACQPLRLPACSARPDTSPLWLQWLP QPQPRVRPRKRRRPRRRAPVLSTHHAARVSLHRWGGCGPHCRLRG EALVALGQPPHARWAPQQDWHWARRYGLPYVVRVDLRRRLAPAPP ATPAPAGTPGPILIPKQALAFAPFSPPKRLRLVSHGSDLDVGGHEEL </p>
1094	Cas-EZH1	<p> MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADRLIYLALAHMIKFRGHFLIEGDLNPDNS DVKDLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYPPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKD KD FLDNEENEDILEDIVLTTLTFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGITALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE </p>

		<p>TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMEIPNPPTSKCITYWKRKVKSEYMRLRQLKRLQANMGAKALYV ANFAKVQEKTQILNEEWKKLRVQPVQSMKPVSGHPFLKKCTIESIFP GFASQHMLMRSNTVALVPIMYSWSPLQQNFMVEDETVLCNIPYMG DEVKEEDETFFIELINNYDGKVHGEEEMIPGSVLISDAVLELVDALN QYSDEEEEGHNDTSDGKQDDSKEDLPVTRKRKRHAIEGNKSSKKQ FPNDMIFSAIASMFPENGVPDDMKERYRELTEMSPNALPPQCTPNI DGPNAKSVQREQSLHSFHTLFCRRCKFYDCFLHPFHATPNVYKRKN KEIKIEPEPCGTDCFLLEGAKEYAMLHNPRSKCSGRRRRRRHHIVSAS CSNASASAVAETKEGDSDRDTGNDWASSSSEANSRCQTPTKQKASP APPQLCVVEAPSEPVEWTGAEESLFRVFHGTIFYNNFCSIARLLGTKT CKQVFQFAVKESLILKLPTDELMNPSQKKKRKHRLWAAHCRKIQLK KDNSSTQVYNYQPCDHPDRPCDSTCPCIMTQNFCEKFCQCNPDQCN RFPGCRCKTQCNTKQCPCYLAVRECDPDLCLTCGASEHWDCKVVSC KNCSIQRGLKKHLLLAPSDVAGWGTFIKESVQKNEFISEYCGELISQD EADRRGKVYDKYMSSFLFNLNNDFFVDATRKGNKIRFANHSVNPN CYAKVVMVNGDHRIGIFAKRAIQAGEELFFDYRYSQADALKYVGIE RETDVL</p>
1095	Cas-EZH2	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEARENQTTQKGQKNSRERMKRIEELIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMGQTGKKSEKGPVCWRKRKVSEYMRLRQLKRFRRADEVKSMFS SNRQKILERTEILNQEWKQRRIQPVHILTSVSSLRGTRCSVTSDLDFP TQVIPLKTLNAVASVPIMYSWSPLQQNFMVEDETVLHNIPYMGDEV LDQDGTFFIELIKNYDGKVHGDRECGFINDEIFVELVNALGQYNDDD DDDDGDDPEEREKQKDLEDHRDDKESRPPRKFPSPDKIFEAISSMFP</p>

		DKGTAEELKEKYKELTEQQLPGALPPECTPNIDGPNAKSVQREQSLH SFHTLFCRRCFKYDCFLHPFHATPNTYKRKNTETALDNKPCGPQCYQ HLEGAKEFAAALTAERIKTPPKRPGGRRRGRLPNNSSRPSTPTINVLE SKDTDSREAGTETGGENNDKEEEEKKDETSSSSSEANSRCQTPIKMK PNIEPPENVEWSGAEASMFRLVIGTYDDNFCAIARLIGTKTCRQVYEF RVKESSIIAPAPAEDVDTPPRKKKRKHRLWAAHCRKIQLKKDGSSNH VYNYQPCDHPRQPCDSSCPCVIAQNFCEKFCQCSSECQNRFPGCRCR AQCNTKQCPCYLAVRECDPDLCLTCGAADHWDSKNVSKNCSIQR GSKKHLALLAPSDVAGWGIFIKDPVQKNEFISEYCGEIIISQDEADRRGK VYDKYMCSFLNLDNFVVDATRKGNKIRFANHSVNPNCYAKVMM VNGDHRIGIFAKRAIQTGEELFFDYRYSQADALKYVGIEREMEIP
1096	Cas- EZH2[S21 A]	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDFANRNFMLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEIEGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKPLIETNGETGEIV WDKGRDFATVRKVLSPQVNVKKTVEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVAKVEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMGQTGKKSEKGPVCWRKRVKAEYMRLRQLKRFRRADEVKSMF SSNRQKILERTEILNQEWKQRRIQPVHILTSVSSLRGTRECSVTSDLDF PTQVIPLKTLNAVASVPIMYSWSPLQQNFMVEDETVLHNIPYMGDEV LDQDGTFFIEELIKNYDGKVHGDRECGFINDEIFVELVNALGQYNDDD DDDDGDDPEEREKQKQDLEDHRDDKESRPPRKFPSDKIFEAISSMFP DKGTAEELKEKYKELTEQQLPGALPPECTPNIDGPNAKSVQREQSLH SFHTLFCRRCFKYDCFLHPFHATPNTYKRKNTETALDNKPCGPQCYQ HLEGAKEFAAALTAERIKTPPKRPGGRRRGRLPNNSSRPSTPTINVLE SKDTDSREAGTETGGENNDKEEEEKKDETSSSSSEANSRCQTPIKMK PNIEPPENVEWSGAEASMFRLVIGTYDDNFCAIARLIGTKTCRQVYEF RVKESSIIAPAPAEDVDTPPRKKKRKHRLWAAHCRKIQLKKDGSSNH VYNYQPCDHPRQPCDSSCPCVIAQNFCEKFCQCSSECQNRFPGCRCR AQCNTKQCPCYLAVRECDPDLCLTCGAADHWDSKNVSKNCSIQR

		GSKKHLLAPSDVAGWGIFIKDPVQKNEFISEYCGEISQDEADRRGK VYDKYMCSFLNLNDFVVDATRKGNKIRFANHSVNPNCYAKVMM VNGDHRIGIFAKRAIQTGEELFFDYRYSQADALKYVGIEREMEIP
1097	Cas- EHMT1	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGAQAQSFIERMTNFDKNLPNEKVLPKH SLLYEFYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDL LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLIHQSIITGLYE TRIDLSQLGGDPKKRKVGSGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMAAADAEAVPARGEPQQDCCVKTELLGEETPMAADEGSAEKQA GEAHMAADGETNGSCENS DASSHANA AKHTQDSARVNPQDGTNTL TRIAENGVSERDSEAAKQNHVTADDFVQTSVIGSNGYILNKPALQAQ PLRTTSTLASSLPGHAAKTLP GGAGKGRTPSAFPQTPAAPPATLGECS ADTEDRKLPAPGADV K VHRARKTMPKSVVGLHAASKDPREVRER DHKEPKKEINKNISDFGRQQLPPFPSLHQSLPQNQC Y MATTKSQT CLPFVLA AAVSRKKKRRMGTYS LVPKKKTKVLKQRTVIEMFKSITHS TVGSKGEKDLGASSLHVNGESLEMDSDDEDDSELEEDDGHGAEQAA AFPTEDSRTSKESMSEADRAQKMDGESEEEQESVDTGEEEGGDESD LSSESIKKKFLKRKGKTDSPWIKPARKRRRRSRKKPSGALGSESYKS SAGSAEQTAPGDSTGYMEVSLDSLDRVKILSSQAEGLANGPDVLE TDGLQEVPLCSCRMETPKSREITTLANNQCMATESVDHELGRCTNSV VKYELMRPSNKAPLLVLCE DHRGRMVKHQCCPGCGYFCTAGNFME CQPESSISHRFHKDCASRVNNASYCPHCGEESSKAKEVTIAKADTTST VTPVPGQEKGSAL EGRADTTT GSAAGPPLSEDDKLQGAASHVPEGF DPTGPAGLGRPTPGLSQGPGETLESALIALDSEKPKLRFHPKQLYF SARQGELQKVLLMLVDGIDPNFKMEHQNKRSPLHAAA EAGHVDICH MLVQAGANIDTCSEDQRTPLMEAAENNHLEAVKYLIKAGALVDPK DAEGSTCLHLAAKKGHYEVVQYLLSNGQMDVNCQDDGGWTPMIW ATEYKHVDLVKLLLSKGS DINIRDNEENICLHWA AFGSCVDIAEILLA AKCDLH AVNIHGDSPLHIAARENRYDCVVLFLSRDSDVTLKNKEGE

		TPLQCASLNSQVWSALQMSKALQDSAPDRPSPVERIVSRDIARGYER IPIPCVNAVDSEPCPSNYKYVSQNCVTSPMNIDRNITHLQYCVCIDDC SSSNCMCGQLSMRCWYDKDGRLLPEFNMAEPPLIFECNHACSCWRN CRNRVVQNGLRARLQLYRTRDMGWGVRSQDIPPGTFVCEYVGELI SDSEADVREEDSYLFDLDNDKDGEVYCIDARFYGNVSRFINHHCEPNL VPVRVFMHQDLRFPRIAFFSTRLEAGEQLGFDYGERFWDIKGKLF8 CRCGSPKCRHSSAALAQRQASAAQEAQEDGLPDTSSAAAADPL
1098	Cas- EHMT2	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVP5SKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDD5FFHRLEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADRLIYLALAHMIKFRGHFLIEGDLNPDNS DVKDLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRENLIA QLPGEKKNGLFGNLIALLSLGLTPNFKSNFDAEDAKLQLSKD5TYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT5YHDLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNF5MQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKV5VDE LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIE5EGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD5VD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEE5VVKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKS5KLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG5TALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL5SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLV5VAKVEKGKSKKLKSVKELLG ITIMERS5SFEKNPIDFLEAKGYKEVKKDLIIKLPKYSLFEL5ENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLF5VE QHKHYLDEIIIEQISEFSKR5VILADANLDKVL5SAYNKH5RDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQ5SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGT5SESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGT5STEPSE TGMAAAAGAAAAAAAE5GEAPAEMGALLLEKETRGATERVHGSLG DTPRSEETLPKATPD5SLEPAGPSSPASVTVTVGDEGADTPVGATPLIG DESENLEGDGDLRGGRILLGHATK5SFPSSPSKGGSCPSRAKMSMTGA GKSPPSVQSLAMRLL5SMPGAQGA5AAGSEPP5PATTSP5EGQPKVHRA RKTMSKPGNGQPPVPEKRP5PEIQHFRMSDDVHSLGKVTSDLAKRRK LNSGGGLSEELGSARRSGE5VTLTKGDPGSLEE5WETVVGDDFSLY5YDS YSVDERVDS5SKSEVEALTEQLSEEEEEEEEEEEEEEEEEEEEEED EESGNQSDRSGSSGRRKAKKKWRK5DSPWVKPSRKR5RKREPPRAKEP RGVNGVGSSGPSEYMEVPLGSLELP5SEGTLSPNHAGVSNDTSSLETE RGFEELPLCSCRMEAPKIDRISERAGHKCMATESVDGELSGCNAAIL KRETMRPSSRVALMVL5CETHRARMVKHHCCPGCGYFCTAGTFLEC HPDFRVAHRFHKACV5SQLNGMVFCPHCGEDASEAQEV5TIPRGDGVT PPAGTAAPAPPPLSQDVP5GRADTSQPSARMRGHGEP5RRPPCDPLADT IDSSG5PSLTL5PNGGCLSAVGLPLGPGREALEKALVIQESERRK5KLRFH PRQLYLSVKQGELQKVILMLLDNLDPNFQSDQ5QSKRTP5LHAAAQKG SVEICHVLLQAGANINAVDKQQRTP5LMEAVVNNHLEVAR5YMVQRG GCVYSKEEDGSTCLHHA5AKIGNLEMV5LLLSTGQVDVNAQD5SGGW

		<p> TPIIWAAEHKHIEVIRMLLTRGADVTLTDNEENICLHWASFTGSAAIA EVLLNARCDLHAVNYHGDTPHIAARESYHDCVLLFLSRGANPELR NKEGDTAWDLTPERSDVWFALQLNRKLRLGVGNRAIRTEKIICRDV ARGYENVPIPCVNGVDGEPCEPYKYISENCETSTMNIDRNITHLQH CTCVDDCSSNCLCGQLSIRCWYDKDGRLLQEFNKIEPPLIFECNQAC SCWRNCKNRVVQSGIKVRLQLYRTAKMGWGVRAALQTIPQGTFIGEY VGELISDAEADVREDDSYLFDLDNDKDGEVYCIDARYYGNISRFINHL CDPNIIIPVRVFMHLHQDLRFPRIAFFSSRDIRTGEELGFDYGDREFWDIKS KYFTCQCGSEKCKHSAEIALEQSRLARLDPHPELLPELGSPLPPVNT </p>
1099	Cas-LSD1	<p> MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKVGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTIAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDFANRNFMLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDND AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVDYVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNVKKTQEVQTTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEKGGKSKKLKSVKELLG ITIMERSSEFKNPIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMLSGKKAIAAAAAAAAAAATGTEAGPGTAGGSENGSEVAAQPA GLSGPAEVGPGAVGERTPRKKEPPRASPPGGLAEPPGSAGPQAGPTV VPGSATPMETGIAETPEGRRTSRRKRKAVEYREMDLANLSEDEYY SEEERNAKAEKEKKLPPPPQAPPEEENESEPEEPSGVEGAQFQSRP HDRMTSQAACFPDIISGPQQTQKVFLFIRNRTLQLWLDNPKIQLTFE ATLQQLEAPYNSDTVLVHRVHSYLERHGLINFGIYKRIKPLPTKKTG KVIIIGSGVSGLAARQLQSFQMDVTLLEARDRVGGRVATFRKGNV VADLGAMVVTGLGGNPMVAVVSKQVNMELAKIKQKCPLYEANGQA VPKEKDEMVEQEFNRLLEATSLSHQLDFNVNLNKPVSLSGQALEVV IQLQEKHVKDEQIEHWKKIVKTQEELKELLNKMVNLKEKIKELHQQ YKEASEVKPPRDITAEFLVSKSKHRDLTALCKEYDELAETQGKLEEL QELANPPSDVYLSSRDQILDWHFANLEFANATPLSTLSLKHWDQD DDFEFTGSHLTVRNGYSCVPVALAEGLDIKLNTAVRQVRYTASGCE VIAVNTRSTSQTFIYKCDVAVLCTPLGLVKQPPAVQFVPLPEWKT AVQRMGFGNLNKVVLCFDRVFWDPVNLFGHVGSTTASRGELFLF </p>

		WNLYKAPILLALVAGEAAGIMENISDDVIVGRCLAILKGIFGSSAVPQ PKETVVSRRWRADPWARGSYSYVAAGSSGNDYDLMAQPITPGPSIPG APQPIPRLFFAGEHTIRNYPATVHGALLSGLREAGRIADQFLGAMYTL PRQATPGVPAQQSPSM
1100	Cas-SUZ12	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALLSLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGAQAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKKRKVGSGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMAPQKHGGGGGGGGSGPSAGSGGGGGGSAVAAATASGGKSG GGSCGGGGSYSASSSSSSAAAAAGAAVLPVKPKMEHVQADHELFL QAFEKPTQIYRFLRTRNLIPIFLHRTLTYMSHRNSRTNIKRKTFKVD DMLSKVEKMKGEQESHLSAHLQLTFTGFFHKNDKPSPNSENEQNS VTLEVLLVKVCHKRKRKDVSCPIRQVPTGKKQVPLNPDNLNQTGPNF PSLAVSSNEFEPSNSHVMKSYSLFRVTRPGRREFNGMINGETNENID VNEELPARRKRNREDGEKTFVAQMTVFDKNRRLQLLDGEYEVAMQ EMECPISKKRATWETILDGKRLPPFETFSQGPTLQFTLRWTGETNDK STAPIAKPLATRNSLSHQENKPGSVKPTQTIAVKESLTTDLQTRKEK DTPNENRQKLRIFYQFLYNNNTRQQTEARDDLHCPWCTLNCRKLYS LLKHLKLCHSRFIFNYVYHPKGARIDVSINECYDGSYAGNPQDIHRQ PGFAFSRNGPVKRTPIHILVCRPKRTKASMSEFLESEDEGEVEQQRTY SSGHNRLYFHSDTCLPLRPQEMEVDSEDEKDPWLREKTTITQIEEFS VNEGEKEVMKLWNLHVMKHGFIADNQMNHACMLFVENYGGKIIK KNLCRNFMHLVSMHDFNLISIMSIDKAVTKLREMQQKLEKGESASP ANEEITEEQNGTANGFSEINSKEKALETDSVSGVSKQSKKQKL
1101	Cas-EED	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS

		<p> DVKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLEPKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSSEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDQD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTETVQTGGFSKESILPKRNSDKLI ARKKDWDPPKYGFDSPVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMSEREVSTAPAGTDMPAKKQKLSSDENSPDLSGDENDDAVSI ESGTNTERPDTPNTPNAPGRKSWGKGKWKSKCKYSFKCVNSLKE DHNQPLFGVQFNWHSKEGDPLVFATVGSNRVTLYECHSQGEIRLLQ SYVDADADENFYTCAWTYDSNTSHPLLAVAGSRGIIRIINPITMQCIK HYVGHGNAINELKFHPRDPNLLSVSKDHALLRWNQTDTLVAIFGG VEGHRDEVLSADYDLLGEKIMSCGMDHSLKLWRINSKRMMNAIKES YDYNPNKTNRPFISQKIHPDFSTRDIHRNYVDCVRWLGDLLSKSCE NAIVCWKPGKMEDDIDKIKPSESNVTILGRFDYSQCDIWMRFSDMF WQKMLALGNQVGKLYVWDLEVEDPHKAKCTTLTHHKCGAAIRQT SFSRDSSILIAVCDDASIWRWDRLR </p>
1102	Cas- RING1	<p> MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLEPKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSSEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHHPENIVIEMARENQTTQKGQKNSRERMKRIEEGIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDQD </p>

		AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGITALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMTPPANAQNASKTWELSLYELHRTPEAIMDGT EIAVSPRSLHSE LMCPICLDMLKNTMTTKECLHRFCSDCIVTALRSGNKECPTCRKKLV SKRSLRPDPNFDALISKIYPSREEYEAHQDRVLIRLSRLHNQQALSSSI EEGLRMQAMHRAQRVRRPIPGSDQTTTMSGGEGEPGEGEGDGEDVS SDSAPDSAPGPAPKRPRGGGAGGSSVGTGGGGTGGVGGGAGSEDSG DRGGTLGGGTGLGPPSPGAPSPPEPGGEIELVFRPHPLLVEKGEYCQT RYVKTGTGNATVDHL SKYLALRIALERRQQQEAGEPGGPGGGASDTG GPDGCGGEGGGAGGGDGPEEPALPSLEGVSEKQYTIYIAPGGGAFTT LNGSLTLELVNEKFWKVSRLPLELCYAPT KD PK
1103	Cas- RING2	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLV DSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKD TYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFE EVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKS DGFANRNF MQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKV VDE LVKVMGRHKPENIVIE MARENQTTQKGQKNSRERMKRIE EGikelGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGITALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIILPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQSI TGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMSQAVQTNGTQPLSKTWELSLYELQRTPEAITDGLEIVVSPRSL HSELMCPICLDMLKNTMTTKECLHRFCADCIITALRSGNKECPTCRK

		KLVSKRSLRPDPNFDALISKIYPSRDEYEAHQERVLARINKHNNQQA LSHSIEEGLKIQAMNRLQRGKKQIENGSGAEDNGDSSHCSNASTHS NQEAGPSNKRRTKTSDDSGLELDNNAAMAIDPVMGASEIELVFRP HPTLMEKDDSAQTRYIKTSGNATVDHLSKYLAVRLALEELRSKGES NQMNLDTASEKQYTIYIATASGQFTVLNGSFSLELVSEKYWKVNKP MELYYAPTKEHK
1104	Cas-PHC1	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPHIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADRLIYLALAHMIKFRGHFLIEGDLNPDNS DVKLFIQLVQTYNQLFEENPINASGVDAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYPPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEEDIKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNVKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKYYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMETESEQNSNSTNGSSSSGSSRPQIAQMSLYERQAVQALQALQR QPNAAQYFHFQMLQQQLSNAQLHSLAAVQQATIAASRQASSPNTST TQQQTTTTQASINLATTSAQSLIRSQSVSSPSATTLTQSVLLGNTTSP PLNQSQAQMYLRPQLGNLLQVNRTLGRNVPLASQLILMPNGAVAAV QQEVPSAQSPGVHADADQVQNLAVRNQQASAQGPQMKGSTQKAIP PGASPVSSLSQASSQALAVAQASSGATNQSLNLSQAGGGSGNSIPGS MGPGGGGQAHGGLGQLPSSGMGGGSCPRKGTGVVQPLPAAQTVTV SQGSQTEAESAAAKKAEADGSGQQNVGMNLTRTATPAPSQTLISSA TYTQIQPHSLIQQQQQIHLQKQVVIQQQIAIHHQQQFQHRQSOLLHT ATHLQLAQQQQQQQQQQQQQQQQPQATTLTAPQPPQVPPTQQVPPSQ SQQQAQTLVVQPMLQSSPLSLPPDAAPKPPPIQSKPPVAPIKPPQLGA AKMSAAQPPPHIPVQVVGTGRQPQTAQAQALGLAQLAAAVPTSRG MPGTVQSGQAHLASSPPSSQAPGALQECPTLAPGMTLAPVQGTAH VVKGGATTSSPVVAQVPAAFYMQSVHLPKGPQTLAVKRKADSEER DDVSTLGSMLPAKASPVAAESPKVMDEKSSLGEKAESVANVNANTPS SELVALTPAPSVPPPTLAMVSRQMGDSKPPQAIVKPQILTHIEGFVIQ EGAEPFVGCSQLLKESEKPLQTLPTGLTENQSGGPLGVDSPSAELD KKANLLKCEYCGKYAPAEQFRGSKRFCSMTCAKRYNVSCSHQFRLK

		RKKMKEFQEANYARVRRRGPRRSSSDIARAKIQGKCHRGQEDSSRG SDNSSYDEALSPTSPGPLSVRAGHGERDLGNPNTAPPTPELHGPNVF LSSNPSRWSVEEVYEFIASLQGCQEIAEEFRSQEIDGQALLLKEEHL MSAMNIKLGPALKICAKINVLTET
1105	Cas-BMI1	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALLSLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEFYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEKGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKRKRKVGPGSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMHRTTRIKITELNPHLMCVLCGGYFIDATTIIECLHSFCKTCIVRYL ETSKYCPICDVQVHKTRPLLNIKSDKTLQDIVYKLVPLGFKNEMKRR RDFYAAHPSADAANGSNEDRGEVADEDKRIITDDEIISLSIEFFDQNR LDRKVNKDKEKSKEEVNDKRYLRCPAAMTVMHLRKFRLSKMDIPN TFQIDVMYEEEPKDYITLMDIAYIYTWRNGLPLKYRVRPTCKR MKISHQRDGLTNAGELESDSGSDKANSPPAGGIPSTSSCLPSPSTPVQS PHPQFPHISSTMNGTSNPSGNHQSSFANRPRKSSVNGSSATSSG
1106	Cas-RBBP4	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALLSLGLTPNFKSNFDLAEDAKLQLSKDITYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEFYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD

		<p>FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDQD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQSITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMADKEAAFDDAVEERVINEEYKIWKKNTPFLYDLVMTHALEWP SLTAQWLPDVTREPGEKDFSIHRLVLGTHTSDEQNLHVIASVQLPNDD AQFDASHYDSEKGEFGGFGSVSGKIEIEIKINHEGEVNRARYMPQNP CIIATKTPSSDVLVFDYTKHPSKPDPSGECNPDRLRLRGHQKEGYGLS WNPNLSGHLLSASDDHTICLWDISAVPKEGKVVDKTIPTGTHTAVVE DVSWHLLHESLFGSVADDQKLMIWDTRSNNTSKPSHSVDAHTAEVN CLSFNPYSEFILATGSADKTVALWDLRNLKLKLHSFESHKDEIFQVQ WSPHNETILASSGTDRRLNVWDL SKIGEEQSPEDAEDGPPELLFIHGG HTAKISDFSWNPNEPWVICSVSEDNIMQVWQMAENIYNDEDPEGSV DPEGQGS</p>
1107	Cas- RBBP7	<p>MGTPKKKRKVMMDKKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADRLIYLALAHMIKFRGHFLIEGDLNPDNS DVKDLFIQLVQTYNQLFEENPINASGVDAKAIL SARLSKSRLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDQD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIKKGILQTVKVVDE LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDQD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE</p>

		<p>QHKHYLDEIIEQISEFSKRVILADANLDKVL SAYNKH RDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMASKEMFEDTVEERVINEEYKIWKKNTPFLYDLVMTHALQWPSL TVQWLPEVTKPEGKDYALHWLVLGTHTSDEQNLHVVARVHIPNDD AQFDASHCDSKGEFGFGSVTGKIECEIKINHEGEVNRARYMPQNP HIIATKTPSSDVLVFDYTKHPAKPDPSGECNPDLRLRGHQKEGYGLS WNSNLSGHLLSASDDHTVCLWDINAGPKEGKIVDAKAIFTGHS AVV EDVAWHLLHESLFGSVADDQKLMIWDTRSNTTSKPSHLVDAHTAEV NCLSFNPYSEFILATGSADKTVALWDLRNLKLKLHTFESHKDEIFQV HWSPHNETILASSGTDRLNVWDL SKIGEEQSAEDAEDGPPELLFIHG GHTAKISDFS WNPNEPWVICSVSEDNIMQIWQMAENIYNDEESDVT SELEGQGS</p>
1108	Cas-REST	<p>MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFS NEMAKVDDSFHRL EESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLV DSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLS DAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKD KD FLDNEENEDILEDIVLTTLTFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKV VDE LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIE EGikelGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD VD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKITLKS KLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKGFDSP TVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLI IKLPKYSLFELENGRK RML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVILADANLDKVL SAYNKH RDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMATQVMGQSSGGGGLFTSSGNIGMALPNDMYDLHDLSKAELAA PQLIMLANVALTGEVNGSCCDYLVGEERQMAELMPVGDNNFSDSEE GEGLEESADIKGEPHGL ENMELRSLELSVVEPQPVF EASGAPDIYSSN KDLPPETPGAEDKGKSSKTKPFRCKPCQYEA ESEEQFVHHIRVHSAK KFFVEESA EKQAKARESGSSTAEEGDFSKGPIRCDRCGYNTNRYDHY TAHLKHHTRAGDNERVYKCICTYTTVSEYHWRKHLRNHFPRKVYT CGKCNFYFS DRKN NYVQHVRTH TGERPYKCELCPYSSSQKTHLTRHM RTHSGEKPFKCDQCSYVASNQHEVTRHARQVHNGPKPLNCPHCDY KTADRSNFKKHVELHVNPRQFNCPCDYAASKKCNLQYHFKSKHPT CPNKTMDVSKVKLKKTKKREADLPDNITNEKTEIEQTKIKGDVAGK</p>

		<p> KNEKSVKAEKRDVSKEKKPSNNVSVIQVTTTRTRKSVTEVKEMDVHT GSNSEKFSKTKKSKRKLEVDSHSLHGPVNDEESSTKKKKKVESKSKN NSQEVPGDSKVEENKKQNTCMKKSTKKKTLKNKSSKSSKPPQKE PVEKGSAQMDPPQMGPAPTEAVQKGPVQVEPPPPMEHAQMEGAQI RPAPDEPVQMEVVQEGPAQKELLPPVEPAQMVGAQIVLAHMELEPP METAQTEVAQMGPAPMEPAQMEVAQVESAPMQVVQKEPVQMELS PPMEVVQKEPVQIELSPMEVVQKEPVKIELSPPIEVVQKEPVQMELS PPMGVVQKEPAQREPPPPREPLHMEPISSKKPPLRKDKKEKSNMQSE RARKEQVLIEVGLVPVKDSWLLKESVSTEDLSPSPPLPKENLREEAS GDQKLLNTGEGNKEAPLQKVGAEAEADESLPGLAANINESTHISSSGQ NLNTPGETLNGKHQTDIVCEMMDTDQNTRENLTGINSTVEEPVS PMLPPSAVEEREAVSKTALASPPATMAANESQEIDEDEGIHSHEGSDL SDNMSEGSDDSLHGARPVPQESSRKNAKEALAVKAAKGDFVCIFC DRSFRKGKDYSKHLNRHLVNVYYLEEAQGGQ </p>
1109	Cas-RCOR1	<p> MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEVVDKGASQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVD LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDQV AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGSELDAKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKGFDSPVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEKPNIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLIHQSIITGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMPAMVEKGPEVSGKRRGRNNAASASAAAASAAASAAACASPAA TAASGAAASSASAAAASAAAAPNNGQNKSLAAAAPNGNSSNSWE EGSSGSSSDEEHGGGMRVGPQYQAVVPDFDPAKLARRSQERDNLG MLVWSPNQNLSEAKLDEYIAIAKEKHGYNMEQALGMLFWHKHNE KSLADLPNFTFPDEWTVEDKVLFEQAFSFGKTFHRIQQMLPDKSI ASLVKFYYSWKKTRTKTSVMDRHARKQKRERESEDELEEANGNN PIDIEVDQNKESKKEVPPTETVPQVKKEKHSTQAKNRAKRKPPKGMF LSQEDVEAVSANATAATTVLRQLDMELVSVKRQIQNIKQTNLSALKE KLDGGIEPYRLPEVIQKCNARWTTEEQLLAVQAIRKYGRDFQAISDVI </p>

		GNKSVVQVKNFFVNYRRRFNIDEVLQEWAEHKGKEETNGPSNQKPV KSPDNSIKMPEEEDEAPVLDVRYASAS
1110	Cas-SIN3A	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLEESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALLSLGLTPNFKSNFDLAEDAKLQLSKDQYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEFYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDL LVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKQQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPKKYGGFDSPTVAYSVLVVAKEVGKSKKLKSVKELLG ITIMERSSEFKNPIDFLEAKGYKEVKKDLIIKLPKYSLELENGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMKRRLDDQESPVYAAQQRRIPGSTEAFFHQHRLAPAPPVYEA SETMQSATGIQYSVTPSYQVSAMPQSSGSHGPAIAAVHSSHHHTAV QPHGGQVVQSHAHPPAPVAPVQGGQQQFQRLKVEDALS YLDQVKLQ FGSQPQVYNDFLDIMKEFKSQSIDTPGVISRVSQFLKGHPDLIMGFNT FLPPGYKIEVQTNDMVNVTTTPGQVHQIPTHGIQPPQPPQHPSPQSA QSAPAPAQPAPQPPPAKVSQPSQLQAHTPASQQTPLPPYASPRSPPV QPHTPVTISLGTAPSLQNNQPVFNHAINYVNIKINRFQGGQPDYKAF LEILHTYQKEQRNAKEAGGNYTPALTEQEVYAQVARLFKNQEDLLS EFGQFLPDANSSVLLSKTTAEKVDSVRNDHGGTVKKPQLNNKPQRP SQNGCQIRRHPTGTPPVKKKPKLLNLKDSSMADASKHGGGTESLFF DKVRKALRSAEAYENFLRCLVIFNQEVISRAELVQLVSPFLGKFPELF NWFKNFLGYKESVHLETYPKERATEGIAEMEIDYASCKRLGSSYRALP KSYQQPKCTGRTPLCKEVLNDTWVSFPSWSEDSTFVSSKKTQYEEHI YRCEDERFELDVVLETNLTIRVLEAIQKLSRLSAAEQAKFRLDNTL GGTSEVIHRKALQRIYADKAADIIDGLRKNPSIAVPIVLKRLKMKEEE WREAQRGFNKVWREQNEKYLLKSLDHQGINFKQNDTKVLRSKSLL NEIESIYDERQEQAATEENAGVPVGPPLSLAYEDKQILEDAAALIIHHV KRQTGIQKEDKYKIKQIMHHFIPDLLFAQRGDLSVDEEEEEEMDVD EATGAVKKHNGVGGSPPKSKLLFSNTAAQKLGMDEVYNLFYVNN NWYIFMRLHQILCLRLLRICSQAERQIEENREREREVLGIKRDKS DSPAIQLRLKEPMDVDVEDYYP AFLDMVRSLLDGNIDSSQYEDSLRE MFTIHAYIAFTMDKLIQSIVRQLQHIVSDEICVQVTDLYLAENNGAT

		GGQLNTQNSRSLLESTYQRKAEQLMSDENCFLMFIQSQQGVQLTIE LLDTEEENSDDPVEAERWSDYVERYMNSDTSPELREHLAQKPVFLP RNLRRIRKCQRGREQQEKEGKEGNSKKTMENTVDSLDKLECRFKLNS YKMVYVIKSEDYMYRRRTALLRAHQSHERVSKRLHQRFQAWVDKW TKEHVPREMAAETSKWLMGEGLEGLVPCTTTCDTETLHFVSINKYR VKYGTVFKAP
1111	Cas- HDAC5	MGTPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLSEESFLVEEDKKHERHPHIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADRLIYLALAHMIKFRGHFLIEGDLNPDNS DVKDLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSAMI KRYDEHHQDLTLLKALVRQQLEPKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKH SLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVD LVKVMGRHKPENIVIEMARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKKNYWRQ LLNAKLITQRKFDNLTKAERGGELSEDKAGFIKRQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNVKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKYYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDENEQQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQSTGLYE TRIDLSQLGGDPKKKRKVGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE TGMNSPNESDGMMSGREPSLEILPRTSLHSIPVTVEVKPVLPRAMPSSM GGGGGGSPSPVELRGALVGSVDPTLREQQLQQELLALKQQQQQLQKQ LLFAEFQKQHDHLTRQHEVQLQKHLKQQQEMLAAKQQQEMLAAK RQQELEQQRQREQQRQEELKQRLEQQLLILRNKEKSKESAIASTE KLRLQEFLLSKSKEPTPGGLNHSPLQHPKCWGAHHASLDQSSPPQSG PPGTPPSYKLPLPGPYDSRDDFPLRKTASEPNLKVRSRLKQKVAERRS SPLLRRKDGTVISTFKKRAVEITGAGPGASSVCNSAPGSGPSSPNSSHS TIAENGFTGSVPNIPTMLPQHRALPLDSSPNQFSLYTSPSLPNISLGL QATVTVTNSHLTASPCLSTQQAERQALQSLRQGGTLTGKFMSTSSI PGCLLGVALEGDGSPHGHASLLQHVLLLEQARQQSTLIAVPLHGQSP LVTGERVATSMRTVGKLPRHRPLSRTQSSPLPQSPQALQQLVMQQQ HQQFLEKQKQQQLQLGKILTKTGELPRQPTTHPEETEEELTEQQEVL LGEGALTMPREGSTESESTQEDLEEEDEEDDGEEDDCIQVKDEEGE SGAEEGPDLEEPGAGYKKLFSDAQPLQPLQVYQAPLSLATVPHQAL GRTQSSPAAPGGMKSPDPVKHLFTTGVVYDTFMLKHQCMCGNT HVVHPEHAGRIQSIWSRLQETGLLSKCEIRGRKATLDEIQTVHSEYHT LLYGTSPLNRRQKLDKSKLLGPISQKMYAVLPCGGIGVDSDTVWNEM HSSAVRMAVGCLLELAFKVAAGELKNGFAIIRPPGHHAEEESTAMGF

		<p>CFNSVAITAKLLQQLNVGKVLIVDWDIHHGNGTQQAFYNDPSVL YISLHRYDNGNFFPGSGAPEEVGGGPGVGYNVNVAWTGGVDPPIGD VEYLTAFRTVVMPIAHEFSPDVVLVSAGFDAVEGHLSPGGYSVTAR CFGHLTRQLMTLAGGRVVLALEGGHDLTAICDASEACVSALLSVEL QPLDEAVLQQKPNINAVATLEKVIEIQSKHWSCVQKFAAGLGRSLRE AQAGETEEAETVSAMALLSVGAEEQAQAAAAAREHSPRAEEPMEQEP AL</p>
1112	(Hs)DNMT 1-Cas	<p>MPARTAPARVPTLAVPAISLPDDVRRRLKDLERDSLTEKECVKEKLN LLHEFLQTEIKNQLCDLETCLRKEELSEEGYLAKVKSLLNKDLSLEN GAHAYNREVNRLNENQARSEARRVGMADANSPPKPLSKPRTPR RSKSDGEAKPEPSPSPRITRKSTRQTTITSHFAKGPAPKRPQEESEKAK SDESIKEEDKDQDEKRRRVTSRERVARPLPAEPPERAKSGTRTEKEEE RDEKEEKRLRSQTKEPTPKQKLKEEPDREARAGVQADEDEDGDEKD EKKHRSQPKDLAAKRRPEEKEPEKVNQISDEKDEDEKEEKRRKTP KEPTEKKMARAKTVMNSKTHPPKCIQCGQYLDDPLKYGQHPPDAV DEPQMLTNEKLSIFDANESGFESYEALPQHKLTCFSVYCKHGLCPID TGLIEKNIELFFSGSAKPIYDDDPSLEGGVNGKNLGPINWWITGFDG GEKALIGFSTSFAEYILMDPSPEYAPIFGLMQEKIYISKIVVEFLQSNDS STYEDLINKIETTVPSPGLNLRFTEDSLLRHAQFVVEQVESYDEAGD SDEQPIFLTPCMRDLIKLAGVTLGQRRQAARRQTIRHSTREKDRGPT KATTTKL VYQIFDTFFAEQIEKDDREDKENAFKRRRCGVCEVCQQPE CGKCKACKDMVKFGGSGRSKQACQERRCPNMAMKEADDDEEVDD NIPEMPSPKKMHQGKKKKQKNKRISWVGEAVKTDGKKSYYKKVCI DAETLEVGDVSVIPDDSSKPLYLARVTALWEDSSNGQMFHAHWFC AGTDTVLGATSDPLELFLVDECEDMQLSYIHSKVKVYKAPSENWA MEGGMDPESLLEGDDGKTYFYQLWYDQDYARFESPPKTQPTEDNK FKFCVSCARLAEMRQKEIPRVLEQLEDLDSRVLYYSATKNGILYRVG DGVYLPPEAFTFNIKLSPPVKRPRKEPVDEDLYPEHYRKYSYIKGSN LDAPEPYRIGRIKEIFCPKKSNGRPNETDIKIRVNKFYRPENTHKSTPA SYHADINLLYWSDEEA VVDFKAVQGRCTVEYGEDLPECVQVYSMG GPNRFYFLEAYNAKSKSFEDPPNHARSPGNKGKKGKKGKPKPSQA CEPSEPEIEIKLPKLRTLDFVSGGGLSEGFHQAGISDTLWAIEMWDP AAQAFRLNNPGSTVFTEDCNILLKLV MAGETTNSRGQRLPQKGDVE MLCGGPPCQGFSGMNRFNSTYSKFKNLSLVSFSLSYCDYYRPRFFLL ENVRNFVSFKRSMVLKLT LRCLVRMGYQCTFGVLQAGQYGVAQTR RRAILAAAPGEKLP LFPEPLHVFAPRACQLSVVDDKKFVSNITRLS SGPFRITITVRDTMSDLPEVRNGASALEISYNGEPQSWFQRQLRGAQY QPILRDHICKDMSALVAARMRHIPLAPGSDWRDLNIEVRLSDGTMA RKLRYTHHDRKNGRSSSGALRGVCSCVEAGKACDPAARQFNTLIPW CLPHTGNRHNHWAGLYGRLEWDGFFSTTVTNPEPMGKQGRVLHPE QHRVSVSVRECARSQGFPD TYRLF GNILDKHRQVGNAVPPPLAKAIGL EIKLCMLAKARESASAKIKEEEAAKDGGPSSGAPPPSGGSPAGSPTST EEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAP GTSTEPSEPKKKRKVMDDKKYSIGLAIGTNSVGWAVITDEYKVPSKKF KVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRI CYLQEIFSNEMAKVDDSSFFHRLEESFLVEEDKKHERHPIFGNIVDEVA YHEKYPTIYHLRKKLV DSTDKADLR LIYLALAHMIKFRGHFLIEGDL NPDNSDV DKLFIQLVQTYNQLFEENPINASGVDAKAIL SARLSKSRRL ENLIAQLPGEKKNGLFGNLIASLGLTPNFKSNFDLAEDAKLQLSKDT YDDDLNLLAQIGDQYADLFLAAKNLS DAILSDILRVNTEITKAPLS ASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYID GGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPH QIHLGELHAILRRQEDFY PFLKDNREKIEKILTFRIPYYVGPLARGNSR FAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKV LPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLF</p>

		<p>KTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKII KDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVM KQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNF QLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVK VVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEGI KELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLS DYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMK NYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQI TKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYK VREINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVR KMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGE TGEIVWDKGRDFATVRKVLSPQVNVKKTEVQTGGFSKESILPKRN SDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKEVEGKSKKLKSV KELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENG RKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQK QLFVEQHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHARDKPIR EQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQSI TGLYETRIDLSQLGGDPKKKRKV</p>
1113	(Hs)DNMT 3A-Cas	<p>MPAMPSSGPGDTSSSAAREEDRKDGEEQEEPRGKEERQEPSTTARK VGRPGRKRKHPPVESGDTPKDPAVISKSPSMAQDSGASELLPNGDLE KRSEPQPEEGSPAGGQKGGAPAEGEAAETLPEASRAVENGCCTPKE GRGAPAEAGKEQKETNIESMKMEGSRGRLRGGLGWESSLRQRPMPR LTFQAGDPYYISKRKDEWLARWKREAEKKAKVIAGMNAVEENQG PGESQKVEEASPPAVQQPTDPASPTVATTPEPVGSDAGDKNATKAG DDEPEYEDGRGFGIGELVWGKLRGFSWWPGRIVSWWMTGRSRAAE GTRWVMWFGDGKFSVVCVEKLMPLSSFCSAFHQATYNKQPMYRK AIYEVVLQVASSRAGKLPVCHDSDESDTAKAVEVQNKPMIEWALGG FQPSGPKGLEPPEEEKNPYKEVYTDMMWVEPEAAAYAPPPAKKPRK STAEKPKVKEIIDERTRERLVYEVQRQKCRNIEDICISCSLNVTLHPL FVGGMCCQNCNCFLECAYYDDDGYSYCTICCGGREVLMMCGNNN CCRCFCVECVDLLVGPAAQAIAKEDPWNCYMCCHKGTGGLRRR EDWPSRLQMFFANNHDDQEFDPKVVPPVPAEKRKPIRVLSLFDGIAT GLLVKDLGIQVDRYIASEVCEDSITVGMVRHQGKIMYVGDVRSVT QKHIQEWGPFDLVIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLLH DARPKEGDDRPFFWLFENVVAMGVSDKRDISRFLSNPVMIDAKEV SAAHRARYFWGNLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVR TITTRSNSIKQGKDQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVS NMSRLARQRLGRSWSVPVIRHLFAPLKEYFACVGGPSSGAPPPSGG SPAGSPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTS TEPSEGSAPGTSTEPSEPKKKRKVMDDKYSIGLAIGTNSVGWAVITD EYKVPSSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARR RYTRRKNRICYLQEIFSNEMAKVDDSFHRLEESFLVEEDKKHERHPI FGNIVDEVAYHEKYPTIYHLRKKLV DSTDKADLRILIYALAHMIKFR GHFLIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILS ARLSKSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAED AKLQLSKDITYDDDLNLLAQIGDQYADLFLAAKNLSAAILSDILRV NTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPKEYKEIFFDQS KNGYAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQ RTFDNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYY VGPLARGNSRFAMTRKSEETITPWNFEVVDKGASAQSFIERMTN FDKNLPNEKVLPKHSLLEYFTVYNELTKVKYVTEGMRKPAFLSGE QKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNAS LGTYHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTY AHLFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSD GFANRNFQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA</p>

		IKKGILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSR ERMKRIEEDIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYV DQELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVP SEEVVKMKKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFI KRQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVS DFRKDFQFYKVRINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVY GDYKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEI RKRPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTG GFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKV EKGKSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIIK LPKYSLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYE KLKGSPEDEKQQLFVEQHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHRRDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTST KEVLDTLIHQSIITGLYETRIDLSQLGGDPKKKRV
1114	(Hs)DNMT 3A(CD)- Cas	MNHDQEFDPKVPVPPVPAEKRPVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLHHDARPEGDDRPF FWLFENVVAMGVSDKRDISRFLSNPVMIDAKEVSAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQKG DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLG RSWSVPVIRHLFAPLKEYFACVGGPSSGAPPPSGGSPAGSPTSTEEGT SESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTST EPSEPKKKRKVMDKKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVL GNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYL QEIFSNEMAKVDDSSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHE KYPTIYHLRKKLVDSITDKADLRILIYLAHAMIKFRGHFLIEGDLNPD NSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRLENL IAQLPGEKKNGLFGNLIALLSLGLTPNFKSNFDLAEDAQLSKDITYD DDLNDLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSAS MIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGG ASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQI HLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYVVGPLARGNSRF AWMTRKSEETITPWNFEVVDKGASAQSFIERMTNFDKNLPNEKVL PKHSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFK TNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIK DKDFLDNEENEDILEDIVLTTLTFEDREMIEERLKYAHLFDDKVMK QLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDFANRNFQMQL IHDDSLTFKEDIQKAQVSGQGDLSLHEHIANLAGSPAIIKKGILQTVKVV DELVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEDIKE LGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDY DVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKKNY WRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITK HVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVR EINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMI AKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGE IVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSGESILPKRNSDK LIARKKDWDPKKYGGFDSPTVAYSVLVVAKVEKGKSKKLKSVKEL LGITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKR MLASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEKQQLF VEQHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHRRDKPIREQA ENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLIHQSIITGL YETRIDLSQLGGDPKKKRV
1115	(Hs/Hs)DN MT3A(CD)	MNHDQEFDPKVPVPPVPAEKRPVLSLFDGIATGLLVLKDLGIQV DRYIASEVCEDSITVGMVRHQKIMYVGDVRSVTQKHIQEWGPFDL VIGGSPCNDLSIVNPARKGLYEGTGRLFFEFYRLHHDARPEGDDRPF

	/L(CD)- Cas	FWLFENVVAMGVSDKRDISRFLESNPVMIDAKEVSAAHRARYFWG NLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITTRSNSIKQGK DQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLARQRLLG RSWSVPVIRHLFAPLKEYFACVSSGNSNANSRGPSFSSGLVPLSLRGS HNPLEMFETVPVWRRQPVRVLSLFEDIKKELTSLGFLESGSDPGQLK HVVDVTDTVRKDVEEWGPFDLVYGATPPLGHTCDRPPSWYLFQFH RLLQYARPKPGSPRPFFWMFVDNLVLNKEDLDVASRFLEMEPVITPD VHGGSLLQNAVVRVWSNIPAIRSRHWALVSEEELSLLAQNKQSSKLAA KWPTKLVKNCFLPLREYFKYFSTELTSSLGGPSSGAPPPSGGSPAGSP TSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEG SAPGTSTEPSEPKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPS KKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRK NRICYLQEIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVD EVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIE GDLNPDNSDVDKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSK SRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQL SKDTYDDDLDNLLAQIGDQYADLFLAAKNLSDAILLSILRVNTEIT KAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGY AGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFD NGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPIYYVGPL ARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKN LPNEKVLPKHSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKKA IVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGT HDLLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKT YAHFLDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKS DGFA NRNFMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSP AIKKGI LQTVKVVDLVKVMGRHKPENIVIEMARENQTTQKGQKNSR ERMK RIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMY VDQELD INRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDN VPSEEVV KKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAG FIKRLV ETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS KLVSDFRKD FQFYKVBREINNYHHAHDAYLNAVVGTA LIKYPKLESEFVYGDYKV YDVRKMIKSEQEIGKATAKYFFYS NIMNFFKTEITLANGEIRKRPLI ETNGETGEIVWDKGRDFAT VRKVL SMPQVNIVKKTEVQTGGFSKESI LPKRNSDKLIARKK DWDPKKYGGFDSPTVAYSVLVVAKEVGKSK KLKSVKELLGIT IMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLF ELEN GRKRLASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPE DNEQKQLFVEQHKHYLDEIIIEQISEFSKRVLADANLDKVL SAYNKH RDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDR KRYTSTKEVLDA TLIHQ SITGLYETRIDLSQLGGDPKKKRKV
1116	(Hs)DNMT 3B-Cas	MKGDTRHLNGEEDAGGREDSILVNGACSDQSSDSPPILEAIRTP EIRG RRSSRLSKREVSSLLSYTQDLTGDDGEDGDGSDTPVMPK LFRCTRSESPAVRTRNNNSVSSRERHRPSRSTRGRQGRNHVDE SPVEFPAT RSLRRRATASAGTPWPSPSSYL TIDLTDDEDTHG TPQSSSTPYARL AQDSQQGGMESPQVEADSGDGSSEYQDGKE FGIGDLVWGKIKGFS WWPAMVVSWKATSKRQAMSGMRWVQWFG DGKFSEVSADKLVAL GLFSQHFNLATFNKLVSRYKAMYHALEK ARVRAGKTFPSSPGDSLE DQLKPMLEWAHGGFKPTGIEGLKPN NTQPVVNKSKVRRAGSRKLES RKYENKTRRRRTADDSATSDYCP APKRLKTNCYNNGKDRGDEDQSR EQMASDVANNKSSLEDGCLSC GRKNPVSFHPLFEGGLCQTCRDRFL ELFYMYDDDGYSYCTVCC EGRELLCSNTSCRCFCVECLEVLVG TGTA AEAKLQEPWSCYMC LPQRCHGVLRRRKDOWNVRLQAFFTSDT GLEYEAPKLYPAIPA ARRRPIRVLSLFDGIATGYLVKELGIKVGKYV ASEVCEESIAVGT VKHEGNIKYVNDVRNITKKNIEEWGPFDLVIGGSP CNDLSNVN PARKGLYEGTGRLFFEFYHLLNYSRPKEGDDRPFFWMF

		<p>ENVVAMKVGDKRDISRFLECNPVMIDAIVSAAHRARYFWGNLPG MNRPVIASKNDKLELQDCLEYNRIAKLKKVQTITTKSNSIKQGKNQL FPVVMNGKEDVLWCTELERIFGFPVHYTDVSNMGRGARQKLLGRS WSVPVIRHLFAPLKDYFACEGGPSSGAPPPSGGSPAGSPTSTEEGTSE SATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEP SEPKKKRKVMDKKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLGN TDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQEI FSNEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEKY PTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSD VDKLFQILVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIAQ LPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAQLQLSKDTYDDDL DNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMIK RYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGASQ EEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLG ELHAILRRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAWM TRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPHKS LLYEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNRK VTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKDF LDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLKR RRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDFANRNFMLIHDD SLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDEL VKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKQQLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVREIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIK SEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIV WDKGRDFATVRKVLSPQVNVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKYGFDSPVAYSVLVVAKEKGKSKKLKSVKELLG ITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLFELNGRKRML ASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDTLHQITGLYE TRIDLSQLGGDPKKRKV</p>
1117	(Hs)DNMT 3B(CD)- Cas	<p>MIRVLSLFDGIATGYLVKELGIKVGKYVASEVCEESIAVGTVKHEG NIKYVNDVRNITKKNIEEWGPFDLVIGGSPCNDLSNVNPARGLYEG TGRLFFEFYHLLNYSRPKEGDDRPFFWMFENVVAMKVGDKRDISRF LECNPVMIDAIVSAAHRARYFWGNLPGMNRPVIASKNDKLELQDC LEYNRIAKLKKVQTITTKSNSIKQGKNQLFPVVMNGKEDVLWCTEL ERIFGFPVHYTDVSNMGRGARQKLLGRSWSVPVIRHLFAPLKDYFAC EGGPSSGAPPPSGGSPAGSPTSTEEGTSESATPESGPGTSTEPSEGSAP GSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSEPKKKRKVMDKKYSIGL AIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKNLIGALLFDSG ETAETRLKRTARRRYTRRKNRICYLQEIFSNEAMAKVDDSFHRLSE SFLVEEDKKHERHPIFGNIVDEVAYHEKYPTIYHLRKKLVDSTDKAD LRLIYLALAHMIKFRGHFLIEGDLNPDNSDVKLFQILVQTYNQLFEE NPINASGVDAKAILSARLSKSRLENLIAQLPGEKKNGLFGNLIALSL GLTPNFKSNFDLAEDAQLQLSKDTYDDDLNLLAQIGDQYADLFLA AKNLSDAILLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVR QQLPEKYKEIFFDQSKNGYAGYIDGGASQEEFYKFIKPILEKMDGTEE LLVKLNREDLLRKQRTFDNGSIPHQIHLGELHAILRRQEDFYFPLKDN REKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEEVVDK GASAQSFIERMTNFDKNLPNEKVLPHKSLLYEYFTVYNELTKVKYVT EGMRKPAFLSGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSV</p>

		<p>EISGVEDRFNASLGTYHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFE DREMIEERLKTYAHLFDDKVMKQLKRRRYTGWGRLSRKLINGIRDK QSGKTILDFLKSDGFANRNFMQLIHDDSLTFKEDIQKAQVSGQGDSL HEHIANLAGSPAIIKGILQTVKVVDLVKVMGRHKPENIVIAMAREN QTTQKGQKNSRERMKRIIEGKELGSQILKEHPVENTQLQNEKLYLY YLQNGRDMYVDQELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRS DKNRGKSDNVPSEEVVKMKMKNYWRQLLNAKLITQRKFDNLTKAER GGLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIRE VKVITLKSCLVSDFRKDFQFYKVREINNYHHAHDAYLNAVVGITALI KKYPKLESEFVYGDYKVYDVRKMIKSEQEIGKATAKYFFYSNIMN FFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDFATVRKVLSPQV NIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTV AYSVLVVAKEGKSKKLKSVKELLGITIMERSSSFENPIDFLEAKG YKEVKKDLIIKLPKYSLFELENGRKRMLASAGELQKGNELALPSKYV NFLYLASHYEKLKGSPEDEQKQLFVEQHKHYLDEIIEQISEFSKRVI LADANLDKVLSAYNKHRDKPIREQAENIIHLFTLTNLGAPAAFKYFD TTIDRKRYTSTKEVLDTLHQITGLYETRIDLSQLGGDPKKKRKV</p>
1118	(Hs/Mm)D NMT3B(C D)/L(CD)- Cas	<p>MIRVLSLFDGIATGYLVLKELGIKVGKYVASEVCEESIAVGTVKHEG NIKYVNDVRNITKKNIEEWGPFDLVIGGSPCNDLSNVNPARKGLYEG TGRLFFEFYHLLNYSRPKEGDDRPFWMFENVVAMKVGDKRDISRF LECNPMIDAIVSAHRARYFWGNLPGMNRPVIAKNDKLELQDC LEYNRIAKLKKVQTITTKSNSIKQGNQLFPVVMNGKEDVLWCTEL ERIFGFPVHYTDVSNMGRGARQKLLGRSWSVPVIRHLFAPLKDYFAC ESSGNSNANSRGPSSFSSGLVPLSLRGSHMGPMIYKTVSAWKRPVR VLSLFRNIDKVLKSLGFLESGSGGGTLKYVEDVTNVVRRDVEKW GPFDLVYGSTQPLGSSCDRCPGWYMFQFHRILQYALPRQESQRPFFW IFMDNLLLTEDDQETTTRFLQTEAVTLQDVRGRDYQNAMRVWSNIP GLKSKHAPLTPKEEYLYLAQVRSRSLDAPKVDLLVKNCLLPLREYF KYFSQNSLPLGGPSSGAPPSGGSPAGSPTSTEEGTSESATPESGPGTS TEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSEPKKKRKVM DKKYSIGLAIGTNSVGWAVITDEYKVPSSKKFKVLGNTDRHSIKKLI GALLFDSGETAEATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDD SFFHRLEESFLVEEDKKHERHPIFGNIVDEVAYHEKYPTIYHLRKKLV DSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSDVKLFIQLVQ TYNQLFEEENPINASGVDAKAILSARLSKSRLENLIAQLPGEKKNGLF GNLIALSLGLTPNFKSNFDLAEDAKLQLSKDITYDDDLNLLAQIGDQ YADLFLAAKNLSAAILSDILRVNTEITKAPLSASMIKRYDEHHQDLT LLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGASQEEFYKFIKPILE KMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELHAILRRQED FYPFLKDNREKIEKILTRIPYYVGPLARGNSRFAWMTRKSEETITPW NFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPHKSLLYEYFTVYNE LTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNRKVTVKQLKEDYF KKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKDFLDNEENEDILED IVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWGRLSR KLINGIRDKQSGKTILDFLKSDGFANRNFMQLIHDDSLTFKEDIQKAQ VSGQGDSLHEHIANLAGSPAIIKGILQTVKVVDLVKVMGRHKPENI VIAMARENQTTQKGQKNSRERMKRIIEGKELGSQILKEHPVENTQL QNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDAIVPQSFLKDDSI DNKVLTRSDKNRGKSDNVPSEEVVKMKMKNYWRQLLNAKLITQRKF DNLTKAERGGLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYD ENDKLIREVKVITLKSCLVSDFRKDFQFYKVREINNYHHAHDAYLNA VVGITALIKKYPKLESEFVYGDYKVYDVRKMIKSEQEIGKATAKYF FYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDFATVRK VLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKY GGFDSPTVAYSVLVVAKEGKSKKLKSVKELLGITIMERSSSFENPI</p>

		DFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRMLASAGELQKGNEL ALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVEQHKHYLDEIIEQIS EFSKRVLADANLDKVL SAYNKH RD KPIREQAENIIHLFTLTNLGAPA AFKYFDTTIDRKRYTSTKEVLDATLIHQ SITGLYETRIDLSQLGGDPK KKRKV
1119	(Hs)DNMT 3-Cas	MAAIPALDPEAEPSMDVILVGSSELSSSVSPGTGRDLIAYEVKANQRN IEDICICCGSLQVHTQHPLFEGGICAPCKDKFLDALFLYDDDDGYQSYC SICCSGETLLICGNPDCTRCYCFECVDSL VGPGTSGKVHAMS NWVCY LCLPSSRSGLLQRRRKWRSQ LKAFYDRESENPLEMFETVPVWRRQP VRVLSLFEDIKKELTSLGFLESGSDPGQLKHVV DVTDTVRKDVEEW GPFDLVYGATPPLGHTCDRPPSWYLFQFHRL LQYARPKPGSPRPFFW MFVDNLVLNKEDLDVASRFLEMEPV TIPDVHGGSLQNAV RVWSNIP AIRSSRH WALVSEEELSLLAQNKQSSKLA AKWPTKL VKNCFLPLREY FKYFSTELTSSLGGPSSGAPPPSGGSPAGSPTSTEEGTSESATPESGPGT STEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSEPKKKRKV MDKKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKN LIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQEIFS NEMAKV DDSFFHRLEESFLVEEDKKHERHPIFGNIVDEVAYHEKYPTIYHLRKK LVDSTDKADRLIYLALAHMIKFRGHFLIEGDLNPDNSD VDKLFIQL VQTYNQLFEENPINASGVDAKAILSARLSKSRREN LIAQLPGEKKN GLFGNLIALSLGLTPNFKS NFDLAEDAKLQLSKDTYDDDDL NLLAQI GDQYADLFLAAKNLS DAILSDILRVNTEITKAPLSASMIKRYDEHH QDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGASQEEFYKFI KPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELHAILR RQEDFYFPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEET ITPWNFE EVVDKGASAQSFIERMTNFDKNLPNEKVL PKHSLLYEYFT VYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNRKVTVKQLK EDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKDFLDNEENE DILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLKRRRYTGW GRLSRKLINGIRDKQSGKTILDFLKS DGFANRNFMQLIHDDSLTFKED IQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKVVD ELVKVMGR HKPENIVIEMARENQTTQKGQKNSRERMKRIE EGikelGSQILKEHPV ENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDAIVPQSFL KDDSIDNKVLTRSDKNRGKSDNPSEEVVKKMKNYWRQLLNAKLI TQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVAQILDSRM NTKYDENDKLIREVKVITLKS KLVSDFRKDFQFYKVREINNYHHAHD AYLNAVVG TALIKKYPKLESEFVYG DYKVYDVRKMIAKSEQEIGKA TAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDF ATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDW DPKKYGGFDSPTVAYSVLVVAKVEKGKSKKLKSVKELLGITIMERS FEKNPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRMLASAGEL QKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVEQHKHYL DEIIEQISEFSKRVLADANLDKVL SAYNKH RD KPIREQAENIIHLFTLT NLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQ SITGLYETRIDLSQL GGDPK KKKRKV
1120	(Mm)DNM T3L-Cas	MGSRETPSSCSKTLETLDLETSDSSSPDADSPLEEQLWKSSPALKEDS VDVVLEDCKEPLSPSSPPTGREMIRYEVKVNRRSIEDICLCGTLQVY TRHPLFEGGLCAPCKDKFLESFLYDDDDGHQSYCTICCSGGTLFICES PDCTRCYCFECVDILVGPGT SERINAMACWVCFLCLPFSRSGLLQRR KRWRHQLKAFHDQEGAGPMEIYKTVSAWK RQPVRVLSLFRNIDKV LKSLGFLESGSGSGGTLKYVEDVTNVVRRDVEKWGPFDLVYGSTQ PLGSSCDRCPGWYMFQFHRLQYALPRQESQRPF FWFMDNLLLTED DQETTTRFLQTEAVTLQDVRGRDYQ NAMRVWSNIPGLKSKHAPLTP KEEEYLQAQVRSRSLDAPKVDLLVKNCLLPLREYFKYFSQNSLPLG GPSSGAPPPSGGSPAGSPTSTEEGTSESATPESGPGTSTEPSEGSAPGSP

		AGSPTSTEEGTSTEPSEGSAPGTSTEPSEPKKKRVMDKKYSIGLAIG TNSVGWAVITDEYKVPSSKKFKVLGNTDRHSIKKNLIGALLFDSGETA EATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSSFFHRLEESFL VEEDKKHERHPIFGNIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRL IYLALAHMIKFRGHFLIEGDLNPDNSDVKLFIQLVQTYNQLFEENPI NASGVDAKAILSARLSKSRRLLENLIAQLPGEKKNGLFGNLIALSLGLT PNFKSNFDLAEDAQLQLSKDQYDDDDLDNLLAQIGDQYADFLAAKN LSDAILLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQ PEKYKEIFFDQSKNGYAGYIDGGASQEEFYKFIKPILEKMDGTEELLV KLNREDLLRKQRTFDNGSIPHQIHLGELHAILRRQEDFYFPLKDNREK IEKILTRIPYYVGPLARGNSRFWMTRKSEETITPWNFEEVVDKGAS AQSFIERMTNFDKNLPNEKVLPHKSLLEYEFTVYNELTKVKYVTEG MRKPAFLSGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEI SGVEDRFNASLGTYHDLKIIKDKDFLDNEENEDILEDIVLTLTLFED REMIEERLKTIAHLFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQ SGKTILDFLKSDFANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLH EHIANLAGSPAIAKKGILQTVKVVDELVKVMGRHKPENIVIMARENQ TTQKGQKNSRERMKRIEIEGKELGSQILKEHPVENTQLQNEKLYLYY LQNGRDMYVDQELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSD KNRGKSDNVPSEEVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERG GLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREV KVITLKSCLVSDFRKDFQFYKVINNYHHAHDAYLNAVVGITALIK KYPKLESEFVYGDYKVYDVRKMIKSEKQIGKATAKYFFYSNIMNFF KTEITLANGEIRKRPLIETNGETGEIVWDKGRDFATVRKVLSPQVNI VKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA YSVLVVAKEKKGSKKLKSVKELLGITIMERSSEKPNIDFLEAKGY KEVKDLIILPKYSLFELENGRKRMLASAGELQKGNELALPSKYVN FLYLASHYEKLKGSPEDEQKQLFVEQHKHYLDEIEQISEFSKRVL ADANLDKVL SAYNKHDKPIREQAENIIHLFTLTNLGAPAAFKYFDT TIDRKRYTSTKEVLDTLHQSITGLYETRIDLSQLGGDPKKKRV
1121	(Mm)DNM T3C-Cas	MRGGSRHLSNEEDVSGCEDCIIISGTCSDQSSDPKTVPLTQVLEAVCT VENRGCRTSSQPSKRKASSLISYVQDLTGDEDEDRDGEVGGSSSGT PVMQPLFCETRIPSKTPAPLSWQANTSASTPWLSASPYPIDLTDEDV IPQSISTPSVDWSQDSHQEGMDTTQVDAESRDGGNIEYQVSADKLL SQSCILAAFYKLVPIRESIYRTLEKARVRAGKACPSPPGESLEDQLKP MLEWAHGGFKPTGIEGLKPNKKQPENKSRRRTTNDPAASESSPPKRL KTNSYGGKDRGEDEESREQMASDVTNNKGNLEDHCLSCGRKDPVS FHPLFEGGLCQSCRDRFLELFYMYDEDEGYQSYCTVCCEGRELLCSN TSCRCFCVECLEVLVGAGTAEDVKLQEPWSCYMCLPQRCHGVLR RKDWNMRLQDFFTTDPDLEEFEPKLYPAIPAAKRRPIRVLSLFDGIA TGYLVLKELGIKVEKYIASEVCAESIAVGTVKHEGQIKYVDDIRNITK EHIDEWGPFDLVIGGSPCNLSCVNPVRKGLFEGTGRLFFEFYRLN YSCPEEEDDRPFFWMFENVVAMEVGDKRDISRFLECNPVMIDAIVS AAHRARYFWGNLPGMNRPMASKNDKLELQDCLEFSRTAKLKKVQ TITTKSNSIRQGNQLFPVVMNGKDDVLWCTELERIFGFPEHYTDVS NMGRGARQKLLGRSWSVPVIRHLFAPLKDHFACGGPSSGAPPPSG GSPAGSPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGT STEPSEGSAPGTSTEPSEPKKKRVMDKKYSIGLAIGTNSVGWAVITD EYKVPSSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARR RYTRRKNRICYLQEIFSNEMAKVDDSSFFHRLEESFLVEEDKKHERHPI FGNIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFR GHFLIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILS ARLSKSRRLLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKNFDLAED AKLQLSKDQYDDDDLDNLLAQIGDQYADFLAAKNLSDAILLSDILRV NTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQPEKYKEIFFDQS

		<p> KNGYAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQ RTFDNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYY VGPLARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTN FDKNLPNEKVLPHKSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGE QKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNAS LGTYHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKT AHLFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKS DGFANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSR ERMKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYV DQELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVP SEEVVKMKKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFI KRQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVS DFRKDFQFYKVRINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVY GDYKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEI RKRPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNIVKKTEVQTG GFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVVAKV EKGKSKKLKSVKELLGITIMERSSSFENPIDFLEAKGYKEVKKDLIIK LPKYSLELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYE KLKGSPEDEQKQLFVEQHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTST KEVLDTLIHQITGLYETRIDLSQLGGDPKKKRKV </p>
1122	(Mm)DNM T3C(CD)- Cas	<p> MIRVLSLFDGIATGYLVKELGIKVEKYIASEVCAESIAVGTVKHEGQ IKYVDDIRNITKEHIDEWGPFDLVIGGSPCNDLSCVNPVRKGLFEGTG RLFFEFYRLNYSCEEEEDDRPFFWMFENVVAMEVGDKRDISRFLEC NPVMIDAIKVSAAHRARYFWGNLPGMNRPMASKNDKLELQDCLE FSRTAKLKKVQTITTKSNSIRQGKNQLFPVVMNGKDDVLWCTELERI FGFPEHYTDVSNMGRGARQKLLGRSWSVPVIRHLFAPLKDHFACEG GPSSGAPPPSGGSPAGSPTSTEEGTSESATPESGPGTSTEPSEGSAPGSP AGSPTSTEEGTSTEPSEGSAPGTSTEPSEPKKKRKVMDDKYSIGLAIG TNSVGWAVITDEYKVPSSKFKVLGNTDRHSIKKNLIGALLFDSGETA EATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDDSFFHRLEESFL VEEDKKHERHPIFGNIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRL IYLALAHMIKFRGHFLIEGDLNPDNSDVKLFIQLVQTYNQLFEENPI NASGVDAKAILSARLSKSRLENLIAQLPGEKKNGLFGNLIALSLGLT PNFKSNFDLAEDAKLQLSKDITYDDDLNLLAQIGDQYADLFLAAKN LSDAILSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQ PEKYKEIFFDQSKNGYAGYIDGGASQEEFYKFIKPILEKMDGTEELLV KLNREDLLRKQRTFDNGSIPHQIHLGELHAILRRQEDFYFPLKDNREK IEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEEVVDKGAS AQSFIERMTNFDKNLPNEKVLPHKSLLEYEFTVYNELTKVKYVTEG MRKPAFLSGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEI SGVEDRFNASLGTYHDLKIIKDKDFLDNEENEDILEDIVLTLTLFED REMIEERLKTAYHLFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQ SGKTILDFLKS DGFANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLH EHIANLAGSPA IKGILQTVKVVDELVKVMGRHKPENIVIAMARENQ TTQKGQKNSRERMKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYY LQNGRDMYVDQELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSD KNRGKSDNVPSEEVVKMKKNYWRQLLNAKLITQRKFDNLTKAERG GLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREV KVITLKSCLVSDFRKDFQFYKVRINNYHHAHDAYLNAVVGTAIIK KYPKLESEFVYGDYKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFF KTEITLANGEIRKRPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNI VKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA YSVLVVAKVEKGKSKKLKSVKELLGITIMERSSSFENPIDFLEAKGY </p>

		KEVKKDLIIKLPKYSLFELNGRKRMLASAGELQKGNELALPSKYVN FLYLASHYEKLKGSPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVIL ADANLDKVL SAYNKH RDKPIREQAENIIHLFTLTNLGAPAAFKYFDT TIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKKRKV
1123	(Mm/Mm) DNMT3C(CD)/L(CD) -Cas	MIRVLSLFDGIATGYLV LKELGIKVEKYIASEVCAESIAVGT VKHEGQ IKYVDDIRNITKEHIDEWGPFDLVIGGSPCNDLSCVNPVRKGLFEGTG RLFFEFYRLLNYSCEEEDDRPFWMFENVVAMEVGDKRDISRFLEC NPVMIDAIKVSAAHRARYFWGNLPGMNRPMASKNDKLELQDCLE FSRTAKLKKVQTITTTKSNSIRQGKNQLFPVVMNGKDDVLWCTELERI FGFPEHYTDVSNMGRGARQKLLGRSWSVPVIRHLFAPLKDHFACESS GNSNANSRGPSSFSSGLVPLSLRGS HMGPM EYKTVSAWKRPVRVLS LFRNIDKVLKSLGFLESGSGSGGGTLKYVEDVTNVVRRDVEKWGPF DLVYGSTQPLGSSCDRCPGWYMFQFHRILQYALPRQESQRPFWFIM DNLLLTEDDQETTTTRFLQTEAVTLQDVRGRDYQNAMRVWSNIPGLK SKHAPLTPKEEEYLQAQVRSRSLDAPKVDLLVKNCLLPLREYFKYF SQNSLPLGGPSSGAPPPSGGSPAGSPTSTEEGTSESATPESGPGTSTEPS EGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSEPKKKRKMVMDKK YSIGLAIGTNSVGWAVITDEYKVP SKKFKVLGNTDRHSIKKNLIGALL FDSGETAEATRLKRTARRRYTRRKNRICYLQEIFS NEMAKVDDSFH RLEESFLVEEDKKHERHPIFGNIVDEVAYHEKYPTIYHLRKKLVDSTD KADLR LIY LALAHMIKFRGHFLIEGDLNPDNSDV DKLFIQLVQTYNQ LFEENPINASGVDAKAILSARLSKSRLENLIAQLPGEKKNGLFGNLI ALSLGLTPNFKS NFDLAEDAKLQLSKDTYDDDLNLLAQIGDQYAD LFLAAKNLSDAILLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLK ALVRQQLPEKYKEIFFDQSKNGYAGYIDGGASQEEFYKFIKPILEKM DGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELHAILRRQEDFYF FLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFE EVVDKGASAQSFIERMTNFDKNLPNEKVL PKHSLLYEYFTVYNELTK VKYVTEGMRKPAFLSGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKI ECFDSVEISGVEDRFNASLGTYHDLLKIIKDKDFLDNEENEDILEDIVL TLTLFEDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWGRLSRKLI NGIRDKQSGKTILDFLKSDGFANRNFQMQLIHDDSLTFKEDIQKAQVS GQGDSLHEHIANLAGSPA IKKGILQTVKVVDLVKVMGRHKPENIVI EMARENQTTQKGQKNSRERMKRIE EGIKELGSQILKEHPVENTQLQN EKL YLYYLQNGRDMYVDQELDINRLSDYDVDAIVPQSFLKDDSIDN KVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNAKLITQRKFDN LTKAERGGLSELDAKAGFIKRQLVETRQITKHVAQILDSRMNTKYDEN DKLIREVKVITL KSKLVSDFRKDFQFYK VREINNYHHAHDAYLNAV VGTALIKKYPKLESEFVYGDYKVYDV RKMIKSEQEIGKATAKYFF YSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDFATVRKV LSMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYG GFDSPTVAYSVLVVAKVEKGKSKKLKSVKELLGITIMERS SFEKNPID FLEAKGYKEVKKDLIIKLPKYSLFELNGRKRMLASAGELQKGNELA LPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVEQHKHYLDEIIEQISE FSKRVILADANLDKVL SAYNKH RDKPIREQAENIIHLFTLTNLGAPAA FKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKK KRKV
1124	(Mp)M.Mp eI-Cas	MNSNKDKIKVIKVFEAFAGIGSQFKALKNIARSKNWEIQHSGMVEW FVDAIVSYVAIHSKNFNPNKIEQLDKDILSISNDSKMPISEYGIKKINNTI KASYLNYAKKHFNFLDIKKVNKD NFPKNIDIFTYSFPCQDL SVQGL QKGIDKELNTRSGLLWEIERILEEIKNSFSKEEMP KYLLMENVKNLLS HKNNKNYNTWLKQLEKFGYKSKTYLLNSKNFDNCQNRERVFCLSIR DDYLEKTGFKFKELEKVNPPKKIKDILVDSSNYKYLNLNKYETTTT RETKSNIISRLKNYTTFNSEN YVYNINGIGPTLTASGANSRIKIETQQ GVRYLTPLECFKYMQFDVND FKKVQSTNLISENKMIIYIAGNSIPVKIL

		<p>EAIFNTLEFVNNEEGGPSSGAPPPSGGSPAGSPTSTEEGTSESATPESG PGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSEPKKK RKVMDKKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSI KKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQEIFSNE MAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEKYPTIYHL RKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSDVKLFI IQLVQTYNQLFEENPINASGVDAKAILSARLSKSRLENLIAQLPGEK KNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDITYDDDLNLLA QIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMIKRYDEH HQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGASQEEFYKF IKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELHAIL RRQEDFYFPLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEE TITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKHSLLEYEYF TVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNRKVTVKQL KEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKDFLDNEEN EDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLKRRRYTGW GRLSRKLINGIRDKQSGKTILDFLKSDFANRNFMLIHDDSLTFKED IQKAQVSGQGDSLHEHIANLAGSPAIIKGILQTVKVVDDELVKVMGR HKPENIVIAMARENQTTQKGQKNSRERMKRIIEGKELGSQILKEHPV ENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDAIVPQSFL KDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNKLI TQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVAQILD SRM NTKYDENDKLIREVKVITLKS KLVSDFRKDFQFYK VREINNYHHAHD AYLNAVVG TALIKKYPKLESEFVYGDYKVYDVRKMIAKSEQEIGKA TAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDF ATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDW DPKKYGGFDSPTVAYSVLVVAKEKGKSKKLKSVKELLGITIMERSS FEKNPIDFLEAKGYKEVKKDLIIKLPKYSLFELENGRKRMLASAGEL QKGNELALPSKYVNFLYLASHYEKLKGS PEDNEQKQLFVEQHKHYL DEIIEQISEFSKRVILADANLDKVL SAYNKHRDKPIREQAENIIHLFTLT NLGAPAAFKYFDTTIDRKRYTSTKEVL DATLIHQ SITGLYETRIDL SQ LGGDPKKKRKV</p>
1125	(Sm)M.Sss I-Cas	<p>MSKVENKTKKLRVFEAFAGIGAQRKALEKVRKDEYEIVGLAEWYVP AIVMYQAIHNNFHTKLEYKSVSREEMIDYLENKTLSWNSKNPVSNG YWKRRKKDDELKIIYNAIKLSEKEGNIFDIRDLYKRTLKNIDLLTYSFP CQDLSQQGIQKGMKRGSGTRSGLLWEIERALDSTEKNDLPKYLLME NVGALLHKKNEEELNQWKQKLESLGYQNSIEVLNAADFGSSQARRR VFMISTLNEFVELPKGDKKPKSIKKVLNKIVSEKDILNNLLKYNLTFE KKTTSNINKASLIGYSKFNSEGYVYDPEFTGPTLTASGANSRIKIKDG SNIRKMNSDETFLYIGFDSQDGKRVNEIEFLTENQKIFVCGNSISVEVL EAIIDKIGGGGPSSGAPPPSGGSPAGSPTSTEEGTSESATPESGPGTSTE PSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSEPKKKRKVMD KKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKNLIG ALLFDSGETAEATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSF FHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEKYPTIYHLRKKLVD STDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSDVKLFIQLVQT YNQLFEENPINASGVDAKAILSARLSKSRLENLIAQLPGEKKNGLFG NLIALSLGLTPNFKSNFDLAEDAKLQLSKDITYDDDLNLLAQIGDQY ADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMIKRYDEHHQDLTL LKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGASQEEFYKFIKPILEK MDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELHAILRRQEDF YPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWN FEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKHSLLEYEYFTVYNEL TKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNRKVTVKQLKEDYFK KIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKDFLDNEENEDILEDI</p>

		<p> VLTLTLFEDREMIEERLKYAHLFDDKVMKQLKRRRYTGWGRLSRK LINGIRDKQSGKTILDFLKSDGFANRNFMLIHDDSLTFKEDIQKAQV SGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDELVKVMGRHKPENIV IEMARENQTTQKGQKNSRERMKRIEEGIKELGSQILKEHPVENTQLQ NEKLYLYYLQNGRDMYVDQELDINRLSDYDVDAIVPQSFLKDDSID NKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNAKLITQRKFD NLTKAERGGLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDE NDKLIREVKVITLKSCLVSDFRKDFQFYKVREINNYHHAHDAYLNA VVGTAIIKKYPKLESEFVYGDYKVYDVRKMIKSEQEIGKATAKYF FYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDFATVRK VLSMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPPKY GGFDSPVAYSVLVAKVEKGKSKKLKSVKELLGITIMERSSSFENPI DFLEAKGYKEVKKDLIIKLPKYSLEFLENGRKRMLASAGELQKGNEL ALPSKYVNFLYLASHYEKLKGSPEDEQKQLFVEQHKHYLDEIIEQIS EFSKRVLADANLDKVL SAYNKHRRDKPIREQAENIIHLFTLTNLGAPA AFKYFDTTIDRKRYTSTKEVLDATLIHQSIITGLYETRIDLSQLGGDPK KKRKV </p>
1126	(Hp)M.Hpa II-Cas	<p> MKDVLDDNLLLEPAAQYSLFEPESNPNLREKFTFIDLFAGIGGFRIAM QNLGGKCIFSSWEQAQKTYEANFGDLPYGDITLEETKAFIPEKFDI LCAGFPCQAFSIAGKRGGFEDTRGTLFFDVAEIIRRHQPKAFFLENVK GLKNHDKGRTLKTILNVLREDLGYFVPEPAIVNAKNFGVPQNRERIY IVGFHKSTGVNSFSYPEPLDKIVTFADIREEKTVPKYLLSTQYIDTLR KHKERHESKGNFGYEIIPDDGIANAIVVGGMGRERNLVIDHRITDFT PTTNIKGEVNREGIRKMTPREWARLQGFPSYVIPVSDASAYKQFGN SVAVPAIQATGKKILEKLGNYLDGGPSSGAPPPSGGSPAGSPTSTEEG TSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTS TEPSEPKKKRKVMDKKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVL GNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYL QEIFSNEMAKVDDSSFFHRLEESFLVEEDKKHERHPIFGNIVDEVAYHE KYPTIYHLRKKLVDSSTKADLRILIYLAHMIKFRGHFLIEGDLNPD NSDVKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRLENL IAQLPGEKKNGLFGNLIASLGLTPNFKSNFDAEDAKLQLSKDITYD DDLNLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSAS MIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGG ASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQI HLGELHAILRRQEDFYFPLKDNREKIEKILTFRIPYVVGPLARGNSRF AWMTRKSEETITPWNFEEVVDKGASASQSFIERMTNFDKNLPNEKVL PKHSLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFK TNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIK DKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMK QLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFML IHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVV DELVKVMGRHKPENIVEMARENQTTQKGQKNSRERMKRIEEGIKE LGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDY DVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNY WRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITK HVAQILDSRMNTKYDEENDKLIREVKVITLKSCLVSDFRKDFQFYKVR EINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMI AKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGE IVWDKGRDFATVRKVL SMPQVNIVKKTEVQTGGFSKESILPKRNSDK LIARKKDWDPPKYGGFDSPVAYSVLVAKVEKGKSKKLKSVKEL LGITIMERSSSFENPIDFLEAKGYKEVKKDLIIKLPKYSLEFLENGRKR MLASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDEQKQLF VEQHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHRRDKPIREQA </p>

		ENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTSTKEVLDATLIHQSI TGL YETRIDLSQLGGDPKKRKV
1127	(Al)M.AluI -Cas	MSKANAKYSFVDLFAGIGGFHAALAATGGVCEYAVEIDREAAAVYE RNWNKPALGDITDDANDEGVTLRGYDGPIDVLTGGFPCQPFSKSGA QHGMATRGTFLWNIARIIEEREPTVLILENVRNLVGPRHRHEWLTI ETLRFFGYEVSGAPAI FSPHLLPAWMGGTPQVRERVFITATLVPERM RDERIPRTETGEIDAEAIGPKPVATMNDRFPIKKGTEL FHPGDRKSG WNLLTSGIIREGDPEPSNVDLRLTETETLWIDAWDDLESTIRRATGRP LEGFPYWADSWTDFRELSRLVVIRGFQAPEREVVGDRKRYVARTDM PEGFVPASVTRPAIDETLPAWKQSHLRRNYDFFERHFAEVVAWAYR WGVYTDLPASRRKLEWQAQDAPRLWDTVMHFRPSGIRAKRPTYL PALVAITQTSIVGPLERRLSPRETARLQGLPEWFD FGEQRAAATYKQ MGNGVNVGVVRHILREHVRRDRALLKLTPAGQRIINAVLADEPDAT VGALGAAEGGPSSGAPPPSGGSPAGSPTSTEEGTSESATPESGPGTST EPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSEPKKRKVM DKKYSIGLAIGTNSVGWAVITDEYKVP SKKFV LGNTDRHSIKKNLI GALLFDSGETAEATRLKRTARRRYTRRKNRICYLQEIFS NEMAKVDD SFFHRLEESFLVEEDKKHERHPIFGNIVDEVAYHEKYPTIYHLRKKLV DSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSDVKLFIQLVQ TYNQLFEENPINASGVDAKAILSARLSKSRLENLIAQLPGEKKNGLF GNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDDLNLLAQIGDQ YADFLAAKNLSDAILLSDILRVNTEITKAPLSASMIKRYDEHHQDLT LLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGASQEEFYKFIKPILE KMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELHAILRRQED FYPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAMTRKSEETITPW NFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPKHSLLYEYFTVYNE LTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNRKVTVKQLKEDYF KKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKDFLDNEENEDILED IVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWGRLSR KLINGIRDKQSGKTILDFLKSDGFANRNFMQLIHDDSLTFKEDIQKAQ VSGQDSLHEHIANLAGSPAIKKGILQTVKVVDLVKVMGRHKPENI VIEMARENQTTQKGQKNSRERMKRIEEGIKELGSQILKEHPVENTQL QNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDAIVPQSFLKDDSI DNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNAKLITQRKF DNLTKAERGGELSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYD ENDKLIREVKVITLKS KLVSDFRKDFQFYK VREINNYHHAHDAYLNA VVG TALIKKYPKLESEFVYGDYKVYDVRKMIAKSEQEIGKATAKYF FYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDFATVRK VLSMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKY GGFDSPTVAYSVLVAKVEKGKSKKLKSVKELLGITIMERS SFEKNPI DFLEAKGYKEVKKDLI KLPKYSLFEL ENGRKRMLASAGELQKGNEL ALPSKYVNFLYLASHYEKLKGS PEDNEQQLFVEQHKHYLDEIIEQIS EFSKRVLADANLDKVL SAYNKH RDKPIREQAENIIHLFTLTNLGAPA AFKYFDTTIDRKRYTSTKEVLDATLIHQSI TGLYETRIDLSQLGGDPK KKRKV
1128	(Al)M.AluI -del82-Cas	MSKANAKYSFVDLFAGIGGFHAALAATGGVCEYAVEIDREAAAVYE RNWNKPALGDITDDANDEGVTLRGYDGPIDVLTGGFPCQPFSKSGA QHGMATRGTFLWNIARIIEEREPTVLILENVRNLVGPRHRHEWLTI ETLRFFGYEVSGAPAI FSPHLLPAWMGGTPQVRERVFITATLVPERM RDERSTIRRATGRPLEGFPYWADSWTDFRELSRLVVIRGFQAPEREV VGDRKRYVARTDMPEGFVPASVTRPAIDETLPAWKQSHLRRNYDFF ERHFAEVVAWAYRWGVYTDLPASRRKLEWQAQDAPRLWDTVMH FRPSGIRAKRPTYLPALVAITQTSIVGPLERRLSPRETARLQGLPEWFD FGEQRAAATYKQMGNGVNVGVVRHILREHVRRDRALLKLTPAGQR IINAVLADEPDATVGALGAAEGGPSSGAPPPSGGSPAGSPTSTEEGTS

		<p>ESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTE PSEPKKKRKVMDKKYSIGLAIGTNSVGWAVITDEYKVPSSKKFKVLG NTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQ EIFSNEMAKVDDSFHRLVESFLVEEDKKHERHPIFGNIVDEVAYHEK YPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNS DVDKLFQQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLLENLIA QLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDD LDNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMI KRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGAS QEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHL GELHAILRRQEDFYFPLKDNREKIEKILTRIPYYVGPLARGNSRFAW MTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPHK SLLEYFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNR KVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKD FLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLK RRRYTGWGRLSRKLINGIRDKQSGKTILDFLKSDGFANRNFQMQLIHD DSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDE LVKVMGRHKPENIVIEARENQTTQKGQKNSRERMKRIEELGKELGS QILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVD AIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKMKKNYWRQ LLNAKLITQRKFDNLTKAERGGLSELDKAGFIKRLVETRQITKHVA QILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVIN NYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVDVRKMIK SEQIGKATAKYFFYSNIMNFFKTEITLANGEIRKPLIETNGETGEIV WDKGRDFATVRKVLSPQVNIVKKTEVQTGGFSKESILPKRNSDKLI ARKKDWDPPKKYGGFDSPTVAYSVLVVAKEKKGSKKLKSVKELLG ITIMERSSEKKNPIDFLEAKGYKEVKKDLIIKLPKYSLELENGRKRML ASAGELQKGNELALPSKYVNFYLYASHYEKLKGSPEDEQKQLFVE QHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKHDKPIREQAEN IIHLFTLTNLGAPAAFYFDTTIDRKRYTSTKEVLDTLIHQSTGLYE TRIDLSQLGGDPKKKRKV</p>
1129	(Ha)M.Hae III-Cas	<p>MNLISLFSGAGGLDLGFQKAGFRIICANEYDKSIWKTYESNHSALIK GDISKISSDEFKCDGIIGPPCQSWSEGGSLRGIDDPKGLFYEYIRIL KQKKPIFFLAENVKGMMAQRHNKAVQEFIQEFDNAGYDVHILLNA NDYGVAQDRKRVFYIGFRKELNINYLPPPHLIKPTFKDVIWDLKDNP IPALDKNKTNGNKCIPNHEYFIGSYSTIFMSRNRVRQWNEPAFTVQ ASGRQCQLHPQAPVMLKVSKNLNKFVEGKEHLYRRLTVRECARVQ GFPDDFIHYESLNDGYKMIGNAVPVNLA YEIAKTIKSALEICKGNGG PSSGAPPPSGGSPAGSPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPA GSPTSTEEGTSTEPSEGSAPGTSTEPSEPKKKRKVMDKKYSIGLAIGT NSVGWAVITDEYKVPSSKKFKVLGNTDRHSIKKNLIGALLFDSGETAE ATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSFHRLVESFLV EEDKKHERHPIFGNIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLI YLALAHMIKFRGHFLIEGDLNPDNSDVDKLFQQLVQTYNQLFEENPIN ASGVDAKAILSARLSKSRRLLENLIAQLPGEKKNGLFGNLIALSLGLTP NFKSNFDLAEDAKLQLSKDTYDDDLDNLLAQIGDQYADLFLAAKNL SDAILLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGASQEEFYKFIKPILEKMDGTEELLVK LNREDLLRKQRTFDNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKI EKILTRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEEVVDKGAS AQSFIERMTNFDKNLPNEKVLPHKSLLEYFTVYNELTKVKYVTEG MRKPAFLSGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEI SGVEDRFNASLGTYHDLKIIKDKDFLDNEENEDILEDIVLTLTLFED REMIEERLKTYAHLFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQ SGKTILDFLKSDGFANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLH</p>

		<p>EHIANLAGSPAIAKKGILQTVKVVDDELVKVMGRHHPENIVIAMARENQ TTQKGQKNSRERMKRIEEGKELGSQILKEHPVENTQLQNEKLYLYY LQNGRDMYVDQELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSD KNRGKSDNVPSEEVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERG GLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREV KVITLKSKLVSDFRKDFQFYKREINNYHHAHDAYLNAVVGITALIK KYPKLESEFVYGDYKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFF KTEITLANGEIRKRPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNI VKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA YSVLVVAKEVGKSKKLKSVKELLGITIMERSSSFENPIDFLEAKGY KEVKKDLIHKLPKYSLFELENGRKRMLASAGELQKGNELALPSKYVN FLYLASHYEKLKGSPEDEQKQLFVEQHKHYLDEIIEQISEFSKRVIL ADANLDKVL SAYNKH RDKPIREQAENIIHLFTLTNLGAPAAFKYFDT TIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKKRKV</p>
1130	(Ha)M.Hae III-T29- Cas	<p>MNLISLFSGAGGLDLGFQKAGFRIICANEYDKSIWKTYESNHS AKLIK GDISKISSDEFKCDGIIGPPCQSWSEGGSLRGIDDPKGLFYEYIRIL KQKKPIFFLAENVKGMMAQRHNKAVQEFIQEFDNAGYDVHIILLNA NDYGVAQDRKRVFYIGFRKELNINYLPPIPHLIKPTFKDVIWDLKDNP IPALDKNKTNGNKCIPNHEYFIGSYSTIFMSANRVRQWNEPAFTVQ ASGRQCQLHPQAPVMLKVSKLMWK FVEGKEHLYRRLTVRECARVQ GFPDDFIFHYESLNDGYKMIGNAVPVNLAYEIAKTIKSALEICKNGG PSSGAPPPSGGSPAGSPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPA GSPTSTEEGTSTEPSEGSAPGTSTEPSEPKKKRKVMDKKYSIGLAIGT NSVGWAVITDEYKVP SKFKVLGNTDRHSIKKNLIGALLFDSGETAE ATRLKRTARRRYTRRKNRICYLQEIFS NEMAKVDDSFHRLEESFLV EEDKKHERHPIFGNIVDEVAYHEKYPTIYHLRKKLVDSTDKADRLI YLALAHMIKFRGHFLIEGDLNPDNSDVKLFIQLVQTYNQLFEENPIN ASGVDAKAILSARLSKSRLENLIAQLPGEKKNGLFGNLIALSLGLTP NFKSNFDLAEDAQLQSKD TYDDDLNLLAQIGDQYADLFLAAKNL SDAILLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGASQEEFYKFIKPILEKMDGTEELLVK LNREDLLRKQRTFDNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKI EKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEVVDKGAS AQSFIERMTNFDKNLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEG MRKPAFLSGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEI SGVEDRFNASLGTYHDLLKIIKDKDFLDNEENEDILEDIVLTLTLFED REMIEERLKTYAHLFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQ SGKTILDFLKSDGFANRNF MQLIHDDSLTFKEDIQKAQVSGQGDSLH EHIANLAGSPAIAKKGILQTVKVVDDELVKVMGRHHPENIVIAMARENQ TTQKGQKNSRERMKRIEEGKELGSQILKEHPVENTQLQNEKLYLYY LQNGRDMYVDQELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSD KNRGKSDNVPSEEVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERG GLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREV KVITLKSKLVSDFRKDFQFYKREINNYHHAHDAYLNAVVGITALIK KYPKLESEFVYGDYKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFF KTEITLANGEIRKRPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNI VKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA YSVLVVAKEVGKSKKLKSVKELLGITIMERSSSFENPIDFLEAKGY KEVKKDLIHKLPKYSLFELENGRKRMLASAGELQKGNELALPSKYVN FLYLASHYEKLKGSPEDEQKQLFVEQHKHYLDEIIEQISEFSKRVIL ADANLDKVL SAYNKH RDKPIREQAENIIHLFTLTNLGAPAAFKYFDT TIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKKRKV</p>
1131	(Hh)M.Hha I-Cas	<p>MIEIKDKQLTGLRFIDLFAGLGGRFRLADESCGAECVYSNEWDKYAQE VYEMNFGEKPEGDITQVNEKTIPDHDILCAGFPCQAFSISGKQKGFED SRGTLFFDIARIVREKKPKVVFME NVKNFASHDNGNTLEVVKNTMN</p>

		<p> ELDYSFHAKVLNALDYGIPQKRERIYMICFRNDLNIQNFQFPKPFELN TFVKDLLLPDSEVEHLVIDRKDLVMTNQIEQTTPKTVRLGIVGKGG QGERIYSTRGIAITLSAYGGGIFAKTGGYLVNGKTRKLHPRECARVM GYPDSYKVHPSTSQAYKQFGNSVVINVLQYIAYNIGSSLNFKPYGGP SSGAPPPSGGSPAGSPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPA GSPTSTEEGTSTEPSEGSAPGTSTEPSEPKKRKRKVMDDKYSIGLAIGT NSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAE ATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSFHRLEESFLV EEDKKHERHPIFGNIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLI YLALAHMIKFRGHFLIEGDLNPDNSDVKLFIQLVQTYNQLFEENPIN ASGVDAKAILSARLSKSRRLLENLIAQLPGEKKNGLFGNLIALSLGLTP NFKSNFDLAEDAQLQLSKDTYDDDLNLLAQIGDQYADLFLAAKNL SDAILLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLP EKYKEIFFDQSKNGYAGYIDGGASQEEFYKFIKPILEKMDGTEELLVK LNREDLLRKQRTFDNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKI EKILTRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEVVDKGAS AQSFIERMTNFDKNLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEG MRKPAFLSGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEI SGVEDRFNASLGTYHDLKIIKDKDFLDNEENEDILEDIVLTLTLFED REMIEERLKYAHLFDDKVMKQLKRRRYTGWGRLSRKLINGIRDQK SGKTILDFLKSDGFANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLH EHIANLAGSPAIIKKGILQTVKVDELVKVMGRHHPENIVEMARENQ TTQKGQKNSRERMKRIEEGKELGSQILKEHPVENTQLQNEKLYLYY LQNGRDMYVDQELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSD KNRGKSDNVPSEEVVKMKMKNYWRQLLNAKLITQRKFDNLTKAERG GLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREV KVITLKSCLVSDFRKDFQFYKVINNYHHAHDAYLNAVVG TALIK KYPKLESEFVYG DYKVYDVRKMIKSEQEIGKATAKYFFYSNIMNFF KTEITLANGEIRKRPLIETNGETGEIVWDKGRDFATVRKVL SMPQVNI VKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA YSVLVVAKEVGKSKKLKSVKELLGITIMERSSEFKNPIDFLEAKGY KEVKKDLIIKLPKYSLFELENGRKRMLASAGELQKGNELALPSKYVN FLYLASHYEKLKGSPEDEQKQLFVEQHKHYLDEIIEQISEFSKRVL ADANLDKVL SAYNKHDKPIREQAENIIHLFTLTNLGAPAAFKYFDT TIDRKRYTSTKEVL DATLIHQ SITGLYETRIDLSQLGGDPKKKRKV </p>
1132	(Ms)M.Ms pI-Cas	<p> MKPEILKLIRSKLDLTQKQASEIIEVSDKTWQQWESGKTEMHPAYYS FLQEKLKDKINFEELSAQKTLQKKIFDKYNQNNQITKNAEELAEITHIE ERKDAYSSDFKFIDLFSGIGGIRQSFEVNGGKCVFSSEIDPFAKFTYYT NFGVVPFGDITKVEATTIPQHDILCAGFPCQPF SHIGKREGFEHPTQGT MFHEIVRIETKKT PVLFL ENVPGLINHDDGNTLKVIIETLEDMGYKV HHTVLDASHFGIPQKRKR FYLVAFLNQNIHFEPKPPMISKDIGEVLE SDVTGYSISEHLQKSYLFFKDDGKPSLIDKNTTGAVKTLVSTYHKIQ RLTGTFVKDGETGIRLLTTNECKAIMGF PKDFVIPVSRTQMYRQMGN SVVVPVVTKIAEQISLALKTVNQQSPQENFELELVGGPSSGAPPPSGG SPAGSPTSTEEGTSESATPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTS TEPSEGSAPGTSTEPSEPKKRKRKVMDDKYSIGLAIGTNSVGWAVITD EYKVPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARR RYTRRKNRICYLQEIFSNEMAKVDDSFHRLEESFLVEEDKKHERHPI FGNIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFR GHFLIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKAILS ARLSKSRRLLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAED AKLQLSKDTYDDDLNLLAQIGDQYADLFLAAKNLSDAILLSDILRV NTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQS KNGYAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQ RTFDNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTRIPYY </p>

		<p>VGPLARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTN FDKNLPNEKVLPHKSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGE QKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNAS LGTYHDLKIIKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKY AHLFDDKVMKQLKRRRYTGWGRLSRKLINGIRDKQSGKTILDFLKS DGFANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPA IKKGILQTVKVVDELVKVMGRHKPENIVIAMARENQTTQKGQKNSR ERMKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYV DQELDINRLSDYDVDAIVPQSFLKDDSIDNKVLTRSDKNRGKSDNVP SEEVVKKMKNYWRQLLNAKLITQRKFDNLTKAERGGLSELDKAGFI KRQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVS DFRKDFQFYKVBREINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVY GDYKVYDVRKMIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEI RKRPLIETNGETGEIVWDKGRDFATVRKVLSPQVNIKKTEVQTG GFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSVLVAKV EKGKSKKLKSVKELLGITIMERSSEFEKNPIDFLEAKGYKEVKKDLIHK LPKYSLELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYE KLKGSPEDNEQKQLFVEQHKHYLDEIIEQISEFSKRVLADANLNDKVL SAYNKHDKPIREQAENIIHLFTLTNLGAPAAFKYFDTTIDRKRYTST KEVLDTLIHQITGLYETRIDLSQLGGDPKKKRKV</p>
1133	(Ai)Masc1- Cas	<p>MSERRYEAGMTVALHEGSFLKIQRVYIRQYHADNRREHMLVGPLFR RTKYLKALSKKVNEVAIVHESIHPVQDVIGVRELIITNRPFECKRG DEHTGRLVCRWVYNLDERAKGREYKKQRYIRRITEAEADPEYRVED RVLRRRWFQEGYIGDEISYKEHNGNDIVDIRSESPLQVLGDWGGDLV DLENGEETSIPGPCRSASSYGRMLKPPLAQAAADSNTSRKYTFGDTFC GGGGVSLGARQAGLEVKWAFFDMNPNAGANYRRNFPNTDFFLAEEAE QFIQLSVGISQHVLDILHLSPPCQTFSTRAHTIAGKNDENNEASFFAVN LIKAVRPRLFTVEETDGIMDRQSRQFIDTALMGITELGYSFRICVLNAI EYGVQCNRKRLIIIGAAPGEELPPFPLPTHQDFFSKDPRRDLLPAVTL DALSTITPESTDHHLNHVWQPAEWKTPYDAHRPFKNRAIRAGGGEYD IYPDGRRKFTVRELACIQGFPEYEFVGTLDKRRRIIGNAVPPPLSAAI MSTLRQWMTEKDFERMEGGPSSGAPPPSGGSPAGSPTSTEEGTSESA TPESGPGTSTEPSEGSAPGSPAGSPTSTEEGTSTEPSEGSAPGTSTEPSE PKKKRKVMDDKYSIGLAIGTNSVGWAVITDEYKVPSKKFKVLGNTD RHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQEIFS NEMAKVDDSFHRLSEESFLVEEDKKHERHPIFGNIVDEVAYHEKYPT IYHLRKKLVDSTDKADRLIYLALAHMIKFRGHFLIEGDLNPDNSDV DKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRENLIQA PGEKKNGLFGNLIALSLGLTPNFKSNFDAEDAKLQLSKDQYDDDL NLLAQIGDQYADLFLAAKNLSDAILSDILRVNTEITKAPLSASMIKR YDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYAGYIDGGASQE EFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGE LHAILRRQEDFYPLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMT RKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVLPHKSL LEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNRKV TVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLKIIKDKDFL DNEENEDILEDIVLTLTLFEDREMIEERLKYAHLFDDKVMKQLKRR RYTGWGRLSRKLINGIRDKQSGKTILDFLKSDFANRNFQMQLIHDDSL TFKEDIQKAQVSGQGDSLHEHIANLAGSPAIIKKGILQTVKVVDELV KVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEGIKELGSQI LKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDAI VPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQL LNAKLITQRKFDNLTKAERGGLSELDKAGFIKRQLVETRQITKHVAQ ILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDFQFYKVBREIN YHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIAKS</p>