

Sequences. Rice codon optimized DNA sequences of WT Cas9, eSpCas9(1.0) (K810A, K1003A, R1060A), eSpCas9(1.1) (K848A, K1003A, R1060A) and SpCas9-HF1(N497A, R661A, Q695A, Q926A). The rice codon optimized SpCas9 and three variants are colored in blue and the modified codons are colored in red. The NLSs are underlined.

WT SpCas9

ATGGCCCCTAAGAAGAAGAGAAAGGTCGGTATTACGGCGTTCCTGCGGCGATGGACAAGAAGTATAGTATTGGTCTGGACATTGGGACGAATTCGGTTGGCTGGGCGGTGATCACCGATGAGTACAAGGTCCTTCCAAGAAGTTTAAGGTTCTGGGGAACACCGATCGGCACAGCATCAAGAAGAAATCTCATTGGAGCCCTCCTGTTCGACTCAGGCGAGACCGCCGAAGCAACAAGGCTCAAGAGAACCGCAAGGAGACGGTATACAAGAAGGAAGAATAGGATCTGCTACCTGCAGGAGATTTTCAGCAACGAAATGGCGAAGGTGGACGATTCTGTTCTTTTCATAGATTGGAGGAGAGTTTCTCGTCGAGGAAGATAAGAAGCACGAGAGGCATCCTATCTTTGGCAACATTGTGCGACGAGGTTGCCTATCACGAAAAGTACCCCAATCTATCATCTGCGGAAGAAGCTTGTGGACTCGACTGATAAGGCGGACCTTAGATTGATCTACCTCGCTCTGGCACACATGATTAAAGTTCAGGGGCCATTTTCTGATCGAGGGGGATCTTAACCCGGACAATAGCGATGTGGACAAGTTGTTTCATCCAGCTCGTCCAAACCTACAATCAGCTCTTTGAGGAAAACCAATTAATGCTTCAGGCGTCGACGCCAAGGCGATCCTGTCTGCACGCCTTTCAAAGTCTCGCCGGCTTGAGAACTTGATCGCTCAACTCCCGGGCGAAAAGAAGAACGGCTTGTTTCGGGAATCTCATTGCACTTTTCGTTGGGGCTCACACCAAACCTCAAGAGTAATTTTGATCTCGCTGAGGACGCAAAGCTGCAGCTTTCCAAGGACACTTATGACGATGACCTGGATAACCTTTTGGCCCAAATCGGCGATCAGTACGCGGACTGTTCCTCGCCGCGAAGAATTTGTGCGACGCGATCCTCCTGAGTGATATTCTCCGCGTGAAACCCGAGATTACAAAGGCCCCGCTCTCGGCGAGTATGATCAAGCGCTATGACGAGCACCATCAGGATCTGACCCTTTTGAAGGCTTTGGTCCGGCAGCAACTCCAGAGAAGTACAAGGAAATCTTCTTTGATCAATCCAAGAACGGCTACGCTGGTTATATTGACGGCGGGGCATCGCAGGAGGAATCTACAAAGTTTATCAAGCCAATTCTGGAGAAGATGGATGGCACAGAGGAACTCCTGGTGAAGCTCAATAGGGAGACCTTTTGCGAAGCAAAGAACTTTTCGATAACGGCAGCATCCCTCACCAGATTCACTCTCGGGAGCTGCACGCCATCCTGAGAAGGCAGGAAGACTTCTACCCCTTTCTTAAGGATAACCGGGAGAAGATCGAAAAGATTCTGACGTTTCAAGATTCCGTACTATGTGCGACCACTCGCCCGGGGTAATTCAGATTTGCGTGGATGACCAGAAAGAGCGAGGAACCATCACACCTTGGAACCTTCGAGGAAGTGGTCGATAAGGGCGCTTCCGCACAGAGCTTCTGAGCGCATGACAAATTTTGACAAGAACCTGCCTAATGAGAAGGTCCTTCCCAAGCATTCCTCCTGTACGAGTATTTCACTGTTTATAACGAACCTCACGAAGGTGAAGTATGTGACCGAGGGAATGCGCAAGCCCGCCTTCCTGAGCGGCGAGCAAAAGAAGCGATCGTGACCTTTTTGTTTAAGACCAATCGGAAGGTTCAGTTAAGCAGCTCAAGGAGACTACTTCAAGAAGATTGAATGCTTCGATTCCGTTGAGATCAGCGCGTGGAAGACAGGTTTAACGCGTCACTGGGGACTTACCACGATCTCCTGAAGATCATTAAGGATAAGGACTTCTTGACAACAGGAAAATGAGGATATCCTCGAAGACATTGTCTGACTCTTACGTTGTTTGAGGATAGGGAAATGATCGAGGAACGCTTGAAGACGTATGCCCATCTCTTCGATGACAAGGTTATGAAGCAGCTCAAGAGAAGAAGATACACCGGATGGGGAAGGCTGTCCGCAAGCTTATCAATGGCATTAGAGACAAGCAATCAGGGAAGACAATTCCTTGACTTTTTGAAGTCTGATGGCTTCGCGAACAGGAATTTTATGCAGCTGATTACGATGACTCACTTACTTTTCAAGGAGGATATCCAGAAGGCTCAAGTGTCGGGACAAGGTGACAGTCTGCACGAGCATATCGCCAACCTTGCGGGATCTCCTGCAATCAAGAAGGGTATTCTGCAGACAGTCAAGGTTGTGGATGAGCTTGTGAAGGTCATGGGACGGCATAAGCCCGAGAACATCGTTATTGAGATGGCCAGAGAAAATCAGACCACACAAAAGGGTCAGAAGAACTCGAGGGAGCGCATGAAGCGCATCGAGGAAGGCATTAAGGAGCTGGGGAGTCAGATCCTTAAGGAGCACCCGGTGGAACACACGAGTTGCAAAATGAGAAGCTCTATCTGTACTATCTGCAAAATGGCAGGGATATGTATGTGGACCAGGAGTTGATATTAACCGCCTCTCGGATTACGACGTCGATCATATCGTTCTCAGTCCTTCTTAAGGATGACAGCATTGACAATAAGGTTCTCACCAGGTCCGACAAGAACCAGGGAAGTCCGATAATGTGCCAAGCGAGGAAGTCGTTAAGAAGATGAAGAATACTGGAGGCAACTTTTTGAATGCCAAGTTGATCACACAGAGGAAGTTTGATAACCTCACTAAGGCCGAGCGCGGAGGTCTCAGCGAACTGGACAAGGCGGGCTTCATTAAGCGGCAACTGGTTGAGACTAGACAGATCACGAAGCACGTGGCGCAGATTCTCGATTACGCGATGAACACGAAGTACGATGAGAATGACAAGCTGATCCGGGAAGTGAAGGTCAACCTTGAAAGTCAAAGCTCGTTTTCTGACTTCAGGAAGGATTTCCAATTTTATAAGGTGCGCGAGATCAACAAATATCACCATGCTCATGACGCATACCTCAACGCTGTGGTTCGGAACAGCATTGATTAAGAAGTACC

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eSpCas9(1.0)

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TTGACACTACGATTGATCGGAAGAGATACTTCTACGAAGGAGGTGCTGGATGCAACCCCTATC
CACCAATCGATTACTGGCCTCTACGAGACGCGGATCGACTTGAGTCAGCTCGGGGGGGAT**AAGAG**
ACCAGCGGCAACCAAGAAGGCAGGACAAGCGAAGAAGAAGTAG