Supplementary Data 1. Protein sequence alignment of Cas9 variants used in this study

```
Clone-1      1 MDKKYSIGLDIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAE
Clone-2      1 MDKKYSIGLDIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAE
Clone-3      1 MDKKYSIGLDIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAE
WT-Cas9      1 MDKKYSIGLDIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAE
eSpCas9      1 MDKKYSIGLDIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAE
Cas9-HF1     1 MDKKYSIGLDIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAE
evo-Cas9     1 MDKKYSIGLDIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAE
Hypa-Cas9    1 MDKKYSIGLDIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAE
xCas9-3.7    1 MDKKYSIGLDIGTNSVGWAVITDEYKVPSKKFKVLGNTDRHSIKKNLIGALLFDSGETAE

Clone-1     61 ATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSFFHRLEESFLVEEDKKHERHPIFG
Clone-2     61 ATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSFFHRLEESFLVEEDKKHERHPIFG
Clone-3     61 ATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSFFHRLEESFLVEEDKKHERHPIFG
WT-Cas9     61 ATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSFFHRLEESFLVEEDKKHERHPIFG
eSpCas9     61 ATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSFFHRLEESFLVEEDKKHERHPIFG
Cas9-HF1    61 ATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSFFHRLEESFLVEEDKKHERHPIFG
evo-Cas9    61 ATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSFFHRLEESFLVEEDKKHERHPIFG
Hypa-Cas9   61 ATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSFFHRLEESFLVEEDKKHERHPIFG
xCas9-3.7   61 ATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSFFHRLEESFLVEEDKKHERHPIFG

Clone-1    121 NIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSD
Clone-2    121 NIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSD
Clone-3    121 NIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSD
WT-Cas9    121 NIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSD
eSpCas9    121 NIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSD
Cas9-HF1   121 NIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSD
evo-Cas9   121 NIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSD
Hypa-Cas9  121 NIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSD
xCas9-3.7  121 NIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRLIYLALAHMIKFRGHFLIEGDLNPDNSD

Clone-1    181 VDKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLENLIAQLPGEKKNGLFGN
Clone-2    181 VDKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLENLIAQLPGEKKNGLFGN
Clone-3    181 VDKLFIQLVQTYNQLFEENPINDSGVDAKAILSARLSKSRRLENLIAQLPGEKKNGLFGN
WT-Cas9    181 VDKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLENLIAQLPGEKKNGLFGN
eSpCas9    181 VDKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLENLIAQLPGEKKNGLFGN
Cas9-HF1   181 VDKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLENLIAQLPGEKKNGLFGN
evo-Cas9   181 VDKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLENLIAQLPGEKKNGLFGN
Hypa-Cas9  181 VDKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLENLIAQLPGEKKNGLFGN
xCas9-3.7  181 VDKLFIQLVQTYNQLFEENPINASGVDAKAILSARLSKSRRLENLIAQLPGEKKNGLFGN

Clone-1    241 LIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDDLDNLLAQIGDQYADLFLAAKNLSDAI
Clone-2    241 LIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDDLDNLLAQIGDQYADLFLAAKNLSDAI
Clone-3    241 LIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDDLDHLLAQIGDQYADLFLAAKNLSDAI
WT-Cas9    241 LIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDDLDNLLAQIGDQYADLFLAAKNLSDAI
eSpCas9    241 LIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDDLDNLLAQIGDQYADLFLAAKNLSDAI
Cas9-HF1   241 LIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDDLDNLLAQIGDQYADLFLAAKNLSDAI
evo-Cas9   241 LIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDDLDNLLAQIGDQYADLFLAAKNLSDAI
Hypa-Cas9  241 LIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDDLDNLLAQIGDQYADLFLAAKNLSDAI
xCas9-3.7  241 LIALSLGLTPNFKSNFDLAEDTKLQLSKDTYDDDLDNLLAQIGDQYADLFLAAKNLSDAI

Clone-1    301 LLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYA
Clone-2    301 LLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYA
Clone-3    301 LLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYA
WT-Cas9    301 LLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYA
eSpCas9    301 LLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYA
Cas9-HF1   301 LLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYA
evo-Cas9   301 LLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYA
Hypa-Cas9  301 LLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYA
xCas9-3.7  301 LLSDILRVNTEITKAPLSASMIKLYDEHHQDLTLLKALVRQQLPEKYKEIFFDQSKNGYA
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Clone-1    361 GYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELH
Clone-2    361 GYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELH
Clone-3    361 GYIDGSASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELH
WT-Cas9    361 GYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELH
eSpCas9    361 GYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELH
Cas9-HF1   361 GYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELH
evo-Cas9   361 GYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELH
Hypa-Cas9  361 GYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGSIPHQIHLGELH
xCas9-3.7  361 GYIDGGASQEEFYKFIKPILEKMDGTEELLVKLNREDLLRKQRTFDNGIIPHQIHLGELH

Clone-1    421 AILRRQEDFYPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEE
Clone-2    421 AILRRQEDFYPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEE
Clone-3    421 AILRRQEDFYPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEE
WT-Cas9    421 AILRRQEDFYPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEE
eSpCas9    421 AILRRQEDFYPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEE
Cas9-HF1   421 AILRRQEDFYPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEE
evo-Cas9   421 AILRRQEDFYPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEE
Hypa-Cas9  421 AILRRQEDFYPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEE
xCas9-3.7  421 AILRRQEDFYPFLKDNREKIEKILTFRIPYYVGPLARGNSRFAWMTRKSEETITPWNFEK

Clone-1    481 VVDKGASAQSFIERMTNFDKNLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPASL
Clone-2    481 VVDKGASAQSFIERMTNFDKNLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFL
Clone-3    481 VVDKGASAQSFIERMTNFDKNLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFL
WT-Cas9    481 VVDKGASAQSFIERMTNFDKNLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFL
eSpCas9    481 VVDKGASAQSFIERMTNFDKNLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFL
Cas9-HF1   481 VVDKGASAQSFIERMTAFDKNLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFL
evo-Cas9   481 VVDKGASAQSFIERVTNFDKNLPNEKVLPKHSLLNEYFTVYNELTKEKYVTEGMRKPAFL
Hypa-Cas9  481 VVDKGASAQSFIERMTNFDKNLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFL
xCas9-3.7  481 VVDKGASAQSFIERMTNFDKNLPNEKVLPKHSLLYEYFTVYNELTKVKYVTEGMRKPAFL

Clone-1    541 SGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKI
Clone-2    541 SGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKI
Clone-3    541 SGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKI
WT-Cas9    541 SGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKI
eSpCas9    541 SGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKI
Cas9-HF1   541 SGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKI
evo-Cas9   541 SGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKI
Hypa-Cas9  541 SGEQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKI
xCas9-3.7  541 SGDQKKAIVDLLFKTNRKVTVKQLKEDYFKKIECFDSVEISGVEDRFNASLGTYHDLLKI

Clone-1    601 IKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWG
Clone-2    601 NKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWG
Clone-3    601 IKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWG
WT-Cas9    601 IKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWG
eSpCas9    601 IKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWG
Cas9-HF1   601 IKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWG
evo-Cas9   601 IKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWG
Hypa-Cas9  601 IKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWG
xCas9-3.7  601 IKDKDFLDNEENEDILEDIVLTLTLFEDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWG

Clone-1    661 RLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMQLIHDDSLTFKEDIQKAQVSGQGDSL
Clone-2    661 RLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMQLIHDDSLTFKEDIQKAQVSGQGDSL
Clone-3    661 RLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMQLIHDDSLTFKEDIQKAQVSGQGDSL
WT-Cas9    661 RLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMQLIHDDSLTFKEDIQKAQVSGQGDSL
eSpCas9    661 RLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMQLIHDDSLTFKEDIQKAQVSGQGDSL
Cas9-HF1   661 ALSRKLINGIRDKQSGKTILDFLKSDGFANRNFMALIHDDSLTFKEDIQKAQVSGQGDSL
evo-Cas9   661 QLSRKLINGIRDKQSGKTILDFLKSDGFANRNFMQLIHDDSLTFKEDIQKAQVSGQGDSL
Hypa-Cas9  661 RLSRKLINGIRDKQSGKTILDFLKSDGFANRAFAALIADDSLTFKEDIQKAQVSGQGDSL
xCas9-3.7  661 RLSRKLINGIRDKQSGKTILDFLKSDGFANRNFIQLIHDDSLTFKEDIQKAQVSGQGDSL
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Clone-1    721 HEHIANLAGSPAIKKGILQTVKVVDELVKVMGRHKPENIVIEIARENQTTQKGQKNSRER
Clone-2    721 HEHIANLAGSPAIKKGILQTVKVVDELVKVMGRHKPENIVIEMARENQTTQKGQKNSRER
Clone-3    721 HEHIANLAGSPAIKKGILQTVKVVDELVKVMGRHKPENIVIEIARENQTTQKGQKNSRER
WT-Cas9    721 HEHIANLAGSPAIKKGILQTVKVVDELVKVMGRHKPENIVIEMARENQTTQKGQKNSRER
eSpCas9    721 HEHIANLAGSPAIKKGILQTVKVVDELVKVMGRHKPENIVIEMARENQTTQKGQKNSRER
Cas9-HF1   721 HEHIANLAGSPAIKKGILQTVKVVDELVKVMGRHKPENIVIEMARENQTTQKGQKNSRER
evo-Cas9   721 HEHIANLAGSPAIKKGILQTVKVVDELVKVMGRHKPENIVIEMARENQTTQKGQKNSRER
Hypa-Cas9  721 HEHIANLAGSPAIKKGILQTVKVVDELVKVMGRHKPENIVIEMARENQTTQKGQKNSRER
xCas9-3.7  721 HEHIANLAGSPAIKKGILQTVKVVDELVKVMGRHKPENIVIEMARENQTTQKGQKNSRER

Clone-1    781 MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDH
Clone-2    781 MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDH
Clone-3    781 MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDH
WT-Cas9    781 MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDH
eSpCas9    781 MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDH
Cas9-HF1   781 MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDH
evo-Cas9   781 MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDH
Hypa-Cas9  781 MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDH
xCas9-3.7  781 MKRIEEGIKELGSQILKEHPVENTQLQNEKLYLYYLQNGRDMYVDQELDINRLSDYDVDH

Clone-1    841 IVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNANLITQRKFDNL
Clone-2    841 IVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNAKLITQRKFDNL
Clone-3    841 IVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNAKLITQRKFDNL
WT-Cas9    841 IVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNAKLITQRKFDNL
eSpCas9    841 IVPQSFLADDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNAKLITQRKFDNL
Cas9-HF1   841 IVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNAKLITQRKFDNL
evo-Cas9   841 IVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNAKLITQRKFDNL
Hypa-Cas9  841 IVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNAKLITQRKFDNL
xCas9-3.7  841 IVPQSFLKDDSIDNKVLTRSDKNRGKSDNVPSEEVVKKMKNYWRQLLNAKLITQRKFDNL

Clone-1    901 TKAERGGLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS
Clone-2    901 TKAERGGLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS
Clone-3    901 TKAERGGLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS
WT-Cas9    901 TKAERGGLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS
eSpCas9    901 TKAERGGLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS
Cas9-HF1   901 TKAERGGLSELDKAGFIKRQLVETRAITKHVAQILDSRMNTKYDENDKLIREVKVITLKS
evo-Cas9   901 TKAERGGLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS
Hypa-Cas9  901 TKAERGGLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS
xCas9-3.7  901 TKAERGGLSELDKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKS

Clone-1    961 KLVSDFRKDFQFYKVREINNYHHAHDAYLNAVVGTALIKKYPKLESEFVYGDYKVYDVRK
Clone-2    961 KLVSYFRKDFQFYKVREINNYHHAHDAYLNAVVGTALIKKYPKLESEFVYGDYKVYDVRK
Clone-3    961 KLVSDFRKDFQFYKVREINNYHHAHDAYLNAVVGTALIKKYPKLESEFVYGDYKVYDVRK
WT-Cas9    961 KLVSDFRKDFQFYKVREINNYHHAHDAYLNAVVGTALIKKYPKLESEFVYGDYKVYDVRK
eSpCas9    961 KLVSDFRKDFQFYKVREINNYHHAHDAYLNAVVGTALIKKYPALESEFVYGDYKVYDVRK
Cas9-HF1   961 KLVSDFRKDFQFYKVREINNYHHAHDAYLNAVVGTALIKKYPKLESEFVYGDYKVYDVRK
evo-Cas9   961 KLVSDFRKDFQFYKVREINNYHHAHDAYLNAVVGTALIKKYPKLESEFVYGDYKVYDVRK
Hypa-Cas9  961 KLVSDFRKDFQFYKVREINNYHHAHDAYLNAVVGTALIKKYPKLESEFVYGDYKVYDVRK
xCas9-3.7  961 KLVSDFRKDFQFYKVREINNYHHAHDAYLNAVVGTALIKKYPKLESEFVYGDYKVYDVRK

Clone-1   1021 MIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDF
Clone-2   1021 MIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDF
Clone-3   1021 MIAKSEQEIGKATAKYFYYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDF
WT-Cas9   1021 MIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDF
eSpCas9   1021 MIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKAPLIETNGETGEIVWDKGRDF
Cas9-HF1  1021 MIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDF
evo-Cas9  1021 MIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDF
Hypa-Cas9 1021 MIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDF
xCas9-3.7 1021 MIAKSEQEIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDF
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Clone-1   1081 ATVRKVLSMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA
Clone-2   1081 ATVRKVLSMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA
Clone-3   1081 ATVRKVLSMPQVNIVKKTEVQPGGFSKESILPKRNSDKLIARKKDWEPKKYGGFDSPTVA
WT-Cas9   1081 ATVRKVLSMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA
eSpCas9   1081 ATVRKVLSMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA
Cas9-HF1  1081 ATVRKVLSMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA
evo-Cas9  1081 ATVRKVLSMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA
Hypa-Cas9 1081 ATVRKVLSMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA
xCas9-3.7 1081 ATVRKVLSMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVA

Clone-1   1141 YSVLVVAKVEKGKSKKLKSVKELLGITIMERSSFEKNPIDFLEAKGYKEVKKDLIIKLPK
Clone-2   1141 YSVLVVAKVEKGKSKKLKSVKELLGITIMERSSFEKNPIDFLEAKGYKEVKKDLIIKLPK
Clone-3   1141 YSVLVVAKVEKGKSKKLKSVKELLGITIMERSSFEKNPIDFLEAKGYKEVKKDLIIKLPK
WT-Cas9   1141 YSVLVVAKVEKGKSKKLKSVKELLGITIMERSSFEKNPIDFLEAKGYKEVKKDLIIKLPK
eSpCas9   1141 YSVLVVAKVEKGKSKKLKSVKELLGITIMERSSFEKNPIDFLEAKGYKEVKKDLIIKLPK
Cas9-HF1  1141 YSVLVVAKVEKGKSKKLKSVKELLGITIMERSSFEKNPIDFLEAKGYKEVKKDLIIKLPK
evo-Cas9  1141 YSVLVVAKVEKGKSKKLKSVKELLGITIMERSSFEKNPIDFLEAKGYKEVKKDLIIKLPK
Hypa-Cas9 1141 YSVLVVAKVEKGKSKKLKSVKELLGITIMERSSFEKNPIDFLEAKGYKEVKKDLIIKLPK
xCas9-3.7 1141 YSVLVVAKVEKGKSKKLKSVKELLGITIMERSSFEKNPIDFLEAKGYKEVKKDLIIKLPK

Clone-1   1201 YSLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE
Clone-2   1201 YSLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE
Clone-3   1201 YSLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE
WT-Cas9   1201 YSLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE
eSpCas9   1201 YSLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE
Cas9-HF1  1201 YSLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE
evo-Cas9  1201 YSLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE
Hypa-Cas9 1201 YSLFELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE
xCas9-3.7 1201 YSLFELENGRKRMLASAGVLQKGNELALPSKYVNFLYLASHYEKLKGSPEDNEQKQLFVE

Clone-1   1261 QHKHYLDEIIEQISEFSKRVILADANLDKVLSAYNKHRDKPIREQAENIIHLFTLTNLGA
Clone-2   1261 QHKHYLDEIIEQISEFSKRVILADANLDKVLSAYNKHRDKPIREQAENIIHLFTLTNLGA
Clone-3   1261 QHKHYLDEIIEQISEFSKRVILADANLDKVLSAYNKHRDKPIREQAENIIHLFTLTNLGA
WT-Cas9   1261 QHKHYLDEIIEQISEFSKRVILADANLDKVLSAYNKHRDKPIREQAENIIHLFTLTNLGA
eSpCas9   1261 QHKHYLDEIIEQISEFSKRVILADANLDKVLSAYNKHRDKPIREQAENIIHLFTLTNLGA
Cas9-HF1  1261 QHKHYLDEIIEQISEFSKRVILADANLDKVLSAYNKHRDKPIREQAENIIHLFTLTNLGA
evo-Cas9  1261 QHKHYLDEIIEQISEFSKRVILADANLDKVLSAYNKHRDKPIREQAENIIHLFTLTNLGA
Hypa-Cas9 1261 QHKHYLDEIIEQISEFSKRVILADANLDKVLSAYNKHRDKPIREQAENIIHLFTLTNLGA
xCas9-3.7 1261 QHKHYLDEIIEQISEFSKRVILADANLDKVLSAYNKHRDKPIREQAENIIHLFTLTNLGA

Clone-1   1321 PAAFKYFDTTIDRKRYTSTKEVLDATLIHQSITGLYETRIDLSQLGGDGGSGPPKKKRKV
Clone-2   1321 PAAFKYFDTTIDRKRYTSTKEVLDATLIHQSITGLYETRIDLSQLGGDGGSGPPKKKRKV
Clone-3   1321 PAAFKYFDTTIDRKRYTSTKEVLDATLIHQSITGLYETRIDLSQLGGDGGSGPPKKKRKV
WT-Cas9   1321 PAAFKYFDTTIDRKRYTSTKEVLDATLIHQSITGLYETRIDLSQLGGDGGSGPPKKKRKV
eSpCas9   1321 PAAFKYFDTTIDRKRYTSTKEVLDATLIHQSITGLYETRIDLSQLGGDGGSGPPKKKRKV
Cas9-HF1  1321 PAAFKYFDTTIDRKRYTSTKEVLDATLIHQSITGLYETRIDLSQLGGDGGSGPPKKKRKV
evo-Cas9  1321 PAAFKYFDTTIDRKRYTSTKEVLDATLIHQSITGLYETRIDLSQLGGDGGSGPPKKKRKV
Hypa-Cas9 1321 PAAFKYFDTTIDRKRYTSTKEVLDATLIHQSITGLYETRIDLSQLGGDGGSGPPKKKRKV
xCas9-3.7 1321 PAAFKYFDTTIDRKRYTSTKEVLDATLIHQSITGLYETRIDLSQLGGDGGSGPPKKKRKV

Clone-1   1381 YPYDVPDYA
Clone-2   1381 YPYDVPDYA
Clone-3   1381 YPYDVPDYA
WT-Cas9   1381 YPYDVPDYA
eSpCas9   1381 YPYDVPDYA
Cas9-HF1  1381 YPYDVPDYA
evo-Cas9  1381 YPYDVPDYA
Hypa-Cas9 1381 YPYDVPDYA
xCas9-3.7 1381 YPYDVPDYA
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DNA sequence alignment of Cas9 variants used in this study

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Clone-1      1 ATGGACAAGAAGTACAGCATCGGCCTGGACATCGGTACCAACAGCGTGGGCTGGGCCGTG
Clone-2      1 ATGGACAAGAAGTACAGCATCGGCCTGGACATCGGTACCAACAGCGTGGGCTGGGCCGTG
Clone-3      1 ATGGACAAGAAGTACAGCATCGGCCTGGACATCGGTACCAACAGCGTGGGCTGGGCCGTG
WT-Cas9      1 ATGGACAAGAAGTACAGCATCGGCCTGGACATCGGTACCAACAGCGTGGGCTGGGCCGTG
eSpCas9      1 ATGGACAAGAAGTACAGCATCGGCCTGGACATCGGTACCAACAGCGTGGGCTGGGCCGTG
Cas9-HF1     1 ATGGACAAGAAGTACAGCATCGGCCTGGACATCGGTACCAACAGCGTGGGCTGGGCCGTG
evo-Cas9     1 ATGGACAAGAAGTACAGCATCGGCCTGGACATCGGTACCAACAGCGTGGGCTGGGCCGTG
Hypa-Cas9    1 ATGGACAAGAAGTACAGCATCGGCCTGGACATCGGTACCAACAGCGTGGGCTGGGCCGTG
xCas9-3.7    1 ATGGACAAGAAGTACAGCATCGGCCTGGACATCGGTACCAACAGCGTGGGCTGGGCCGTG

Clone-1     61 ATCACCGACGAGTACAAGGTGCCCAGCAAGAAGTTCAAGGTGCTGGGCAACACCGACCGC
Clone-2     61 ATCACCGACGAGTACAAGGTGCCCAGCAAGAAGTTCAAGGTGCTGGGCAACACCGACCGC
Clone-3     61 ATCACCGACGAGTACAAGGTGCCCAGCAAGAAGTTCAAGGTGCTGGGCAACACCGACCGC
WT-Cas9     61 ATCACCGACGAGTACAAGGTGCCCAGCAAGAAGTTCAAGGTGCTGGGCAACACCGACCGC
eSpCas9     61 ATCACCGACGAGTACAAGGTGCCCAGCAAGAAGTTCAAGGTGCTGGGCAACACCGACCGC
Cas9-HF1    61 ATCACCGACGAGTACAAGGTGCCCAGCAAGAAGTTCAAGGTGCTGGGCAACACCGACCGC
evo-Cas9    61 ATCACCGACGAGTACAAGGTGCCCAGCAAGAAGTTCAAGGTGCTGGGCAACACCGACCGC
Hypa-Cas9   61 ATCACCGACGAGTACAAGGTGCCCAGCAAGAAGTTCAAGGTGCTGGGCAACACCGACCGC
xCas9-3.7   61 ATCACCGACGAGTACAAGGTGCCCAGCAAGAAGTTCAAGGTGCTGGGCAACACCGACCGC

Clone-1    121 CACAGCATCAAGAAGAACCTGATCGGCGCCCTGCTGTTCGACAGCGGCGAGACCGCCGAG
Clone-2    121 CACAGCATCAAGAAGAACCTGATCGGCGCCCTGCTGTTCGACAGCGGCGAGACCGCCGAG
Clone-3    121 CACAGCATCAAGAAGAACCTGATCGGCGCCCTGCTGTTCGACAGCGGCGAGACCGCCGAG
WT-Cas9    121 CACAGCATCAAGAAGAACCTGATCGGCGCCCTGCTGTTCGACAGCGGCGAGACCGCCGAG
eSpCas9    121 CACAGCATCAAGAAGAACCTGATCGGCGCCCTGCTGTTCGACAGCGGCGAGACCGCCGAG
Cas9-HF1   121 CACAGCATCAAGAAGAACCTGATCGGCGCCCTGCTGTTCGACAGCGGCGAGACCGCCGAG
evo-Cas9   121 CACAGCATCAAGAAGAACCTGATCGGCGCCCTGCTGTTCGACAGCGGCGAGACCGCCGAG
Hypa-Cas9  121 CACAGCATCAAGAAGAACCTGATCGGCGCCCTGCTGTTCGACAGCGGCGAGACCGCCGAG
xCas9-3.7  121 CACAGCATCAAGAAGAACCTGATCGGCGCCCTGCTGTTCGACAGCGGCGAGACCGCCGAG

Clone-1    181 GCCACCCGCCTGAAGCGCACCGCCCGCCGCCGCTACACCCGCCGCAAGAACCGCATCTGC
Clone-2    181 GCCACCCGCCTGAAGCGCACCGCCCGCCGCCGCTACACCCGCCGCAAGAACCGCATCTGC
Clone-3    181 GCCACCCGCCTGAAGCGCACCGCCCGCCGCCGCTACACCCGCCGCAAGAACCGCATCTGC
WT-Cas9    181 GCCACCCGCCTGAAGCGCACCGCCCGCCGCCGCTACACCCGCCGCAAGAACCGCATCTGC
eSpCas9    181 GCCACCCGCCTGAAGCGCACCGCCCGCCGCCGCTACACCCGCCGCAAGAACCGCATCTGC
Cas9-HF1   181 GCCACCCGCCTGAAGCGCACCGCCCGCCGCCGCTACACCCGCCGCAAGAACCGCATCTGC
evo-Cas9   181 GCCACCCGCCTGAAGCGCACCGCCCGCCGCCGCTACACCCGCCGCAAGAACCGCATCTGC
Hypa-Cas9  181 GCCACCCGCCTGAAGCGCACCGCCCGCCGCCGCTACACCCGCCGCAAGAACCGCATCTGC
xCas9-3.7  181 GCCACCCGCCTGAAGCGCACCGCCCGCCGCCGCTACACCCGCCGCAAGAACCGCATCTGC

Clone-1    241 TACCTGCAGGAGATCTTCAGCAACGAGATGGCCAAGGTGGACGACAGCTTCTTCCACCGC
Clone-2    241 TACCTGCAGGAGATCTTCAGCAACGAGATGGCCAAGGTGGACGACAGCTTCTTCCACCGC
Clone-3    241 TACCTGCAGGAGATCTTCAGCAACGAGATGGCCAAGGTGGACGACAGCTTCTTCCACCGC
WT-Cas9    241 TACCTGCAGGAGATCTTCAGCAACGAGATGGCCAAGGTGGACGACAGCTTCTTCCACCGC
eSpCas9    241 TACCTGCAGGAGATCTTCAGCAACGAGATGGCCAAGGTGGACGACAGCTTCTTCCACCGC
Cas9-HF1   241 TACCTGCAGGAGATCTTCAGCAACGAGATGGCCAAGGTGGACGACAGCTTCTTCCACCGC
evo-Cas9   241 TACCTGCAGGAGATCTTCAGCAACGAGATGGCCAAGGTGGACGACAGCTTCTTCCACCGC
Hypa-Cas9  241 TACCTGCAGGAGATCTTCAGCAACGAGATGGCCAAGGTGGACGACAGCTTCTTCCACCGC
xCas9-3.7  241 TACCTGCAGGAGATCTTCAGCAACGAGATGGCCAAGGTGGACGACAGCTTCTTCCACCGC

Clone-1    301 CTGGAGGAGAGCTTCCTGGTGGAGGAGGACAAGAAGCACGAGCGCCACCCCATCTTCGGC
Clone-2    301 CTGGAGGAGAGCTTCCTGGTGGAGGAGGACAAGAAGCACGAGCGCCACCCCATCTTCGGC
Clone-3    301 CTGGAGGAGAGCTTCCTGGTGGAGGAGGACAAGAAGCACGAGCGCCACCCCATCTTCGGC
WT-Cas9    301 CTGGAGGAGAGCTTCCTGGTGGAGGAGGACAAGAAGCACGAGCGCCACCCCATCTTCGGC
eSpCas9    301 CTGGAGGAGAGCTTCCTGGTGGAGGAGGACAAGAAGCACGAGCGCCACCCCATCTTCGGC
Cas9-HF1   301 CTGGAGGAGAGCTTCCTGGTGGAGGAGGACAAGAAGCACGAGCGCCACCCCATCTTCGGC
evo-Cas9   301 CTGGAGGAGAGCTTCCTGGTGGAGGAGGACAAGAAGCACGAGCGCCACCCCATCTTCGGC
Hypa-Cas9  301 CTGGAGGAGAGCTTCCTGGTGGAGGAGGACAAGAAGCACGAGCGCCACCCCATCTTCGGC
xCas9-3.7  301 CTGGAGGAGAGCTTCCTGGTGGAGGAGGACAAGAAGCACGAGCGCCACCCCATCTTCGGC
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Clone-1    361 AACATCGTGGACGAGGTGGCCTACCACGAGAAGTACCCCACCATCTACCACCTGCGCAAG
Clone-2    361 AACATCGTGGACGAGGTGGCCTACCACGAGAAGTACCCCACCATCTACCACCTGCGCAAG
Clone-3    361 AACATCGTGGACGAGGTGGCCTACCACGAGAAGTACCCCACCATCTACCACCTGCGCAAG
WT-Cas9    361 AACATCGTGGACGAGGTGGCCTACCACGAGAAGTACCCCACCATCTACCACCTGCGCAAG
eSpCas9    361 AACATCGTGGACGAGGTGGCCTACCACGAGAAGTACCCCACCATCTACCACCTGCGCAAG
Cas9-HF1   361 AACATCGTGGACGAGGTGGCCTACCACGAGAAGTACCCCACCATCTACCACCTGCGCAAG
evo-Cas9   361 AACATCGTGGACGAGGTGGCCTACCACGAGAAGTACCCCACCATCTACCACCTGCGCAAG
Hypa-Cas9  361 AACATCGTGGACGAGGTGGCCTACCACGAGAAGTACCCCACCATCTACCACCTGCGCAAG
xCas9-3.7  361 AACATCGTGGACGAGGTGGCCTACCACGAGAAGTACCCCACCATCTACCACCTGCGCAAG

Clone-1    421 AAGCTGGTGGACAGCACCGACAAGGCCGACCTGCGCCTGATCTACCTGGCCCTGGCCCAC
Clone-2    421 AAGCTGGTGGACAGCACCGACAAGGCCGACCTGCGCCTGATCTACCTGGCCCTGGCCCAC
Clone-3    421 AAGCTGGTGGACAGCACTGACAAGGCCGACCTGCGCCTGATCTACCTGGCCCTGGCCCAC
WT-Cas9    421 AAGCTGGTGGACAGCACCGACAAGGCCGACCTGCGCCTGATCTACCTGGCCCTGGCCCAC
eSpCas9    421 AAGCTGGTGGACAGCACCGACAAGGCCGACCTGCGCCTGATCTACCTGGCCCTGGCCCAC
Cas9-HF1   421 AAGCTGGTGGACAGCACCGACAAGGCCGACCTGCGCCTGATCTACCTGGCCCTGGCCCAC
evo-Cas9   421 AAGCTGGTGGACAGCACCGACAAGGCCGACCTGCGCCTGATCTACCTGGCCCTGGCCCAC
Hypa-Cas9  421 AAGCTGGTGGACAGCACCGACAAGGCCGACCTGCGCCTGATCTACCTGGCCCTGGCCCAC
xCas9-3.7  421 AAGCTGGTGGACAGCACCGACAAGGCCGACCTGCGCCTGATCTACCTGGCCCTGGCCCAC

Clone-1    481 ATGATCAAGTTCCGCGGCCACTTCCTGATCGAGGGCGACCTGAACCCCGACAACAGCGAC
Clone-2    481 ATGATCAAGTTCCGCGGCCACTTCCTGATCGAGGGCGACCTGAACCCCGACAACAGCGAC
Clone-3    481 ATGATCAAGTTCCGCGGCCACTTCCTGATCGAGGGCGACCTGAACCCCGACAACAGCGAC
WT-Cas9    481 ATGATCAAGTTCCGCGGCCACTTCCTGATCGAGGGCGACCTGAACCCCGACAACAGCGAC
eSpCas9    481 ATGATCAAGTTCCGCGGCCACTTCCTGATCGAGGGCGACCTGAACCCCGACAACAGCGAC
Cas9-HF1   481 ATGATCAAGTTCCGCGGCCACTTCCTGATCGAGGGCGACCTGAACCCCGACAACAGCGAC
evo-Cas9   481 ATGATCAAGTTCCGCGGCCACTTCCTGATCGAGGGCGACCTGAACCCCGACAACAGCGAC
Hypa-Cas9  481 ATGATCAAGTTCCGCGGCCACTTCCTGATCGAGGGCGACCTGAACCCCGACAACAGCGAC
xCas9-3.7  481 ATGATCAAGTTCCGCGGCCACTTCCTGATCGAGGGCGACCTGAACCCCGACAACAGCGAC

Clone-1    541 GTGGACAAGCTGTTCATCCAGCTGGTGCAGACCTACAACCAGCTGTTCGAGGAGAACCCC
Clone-2    541 GTGGACAAGCTGTTTATCCAGCTGGTGCAGACCTACAACCAGCTGTTCGAGGAGAACCCC
Clone-3    541 GTGGACAAGCTGTTCATCCAGCTGGTGCAGACCTACAACCAGCTGTTCGAGGAGAACCCC
WT-Cas9    541 GTGGACAAGCTGTTCATCCAGCTGGTGCAGACCTACAACCAGCTGTTCGAGGAGAACCCC
eSpCas9    541 GTGGACAAGCTGTTCATCCAGCTGGTGCAGACCTACAACCAGCTGTTCGAGGAGAACCCC
Cas9-HF1   541 GTGGACAAGCTGTTCATCCAGCTGGTGCAGACCTACAACCAGCTGTTCGAGGAGAACCCC
evo-Cas9   541 GTGGACAAGCTGTTCATCCAGCTGGTGCAGACCTACAACCAGCTGTTCGAGGAGAACCCC
Hypa-Cas9  541 GTGGACAAGCTGTTCATCCAGCTGGTGCAGACCTACAACCAGCTGTTCGAGGAGAACCCC
xCas9-3.7  541 GTGGACAAGCTGTTCATCCAGCTGGTGCAGACCTACAACCAGCTGTTCGAGGAGAACCCC

Clone-1    601 ATCAACGCCAGCGGCGTGGACGCCAAGGCCATCCTGAGCGCCCGCCTGAGCAAGAGCCGC
Clone-2    601 ATCAACGCCAGCGGCGTGGACGCCAAGGCCATCCTGAGCGCCCGCCTGAGCAAGAGCCGC
Clone-3    601 ATCAACGACAGCGGCGTGGACGCCAAGGCCATCCTGAGCGCCCGCCTGAGCAAGAGCCGC
WT-Cas9    601 ATCAACGCCAGCGGCGTGGACGCCAAGGCCATCCTGAGCGCCCGCCTGAGCAAGAGCCGC
eSpCas9    601 ATCAACGCCAGCGGCGTGGACGCCAAGGCCATCCTGAGCGCCCGCCTGAGCAAGAGCCGC
Cas9-HF1   601 ATCAACGCCAGCGGCGTGGACGCCAAGGCCATCCTGAGCGCCCGCCTGAGCAAGAGCCGC
evo-Cas9   601 ATCAACGCCAGCGGCGTGGACGCCAAGGCCATCCTGAGCGCCCGCCTGAGCAAGAGCCGC
Hypa-Cas9  601 ATCAACGCCAGCGGCGTGGACGCCAAGGCCATCCTGAGCGCCCGCCTGAGCAAGAGCCGC
xCas9-3.7  601 ATCAACGCCAGCGGCGTGGACGCCAAGGCCATCCTGAGCGCCCGCCTGAGCAAGAGCCGC

Clone-1    661 CGCCTGGAGAACCTGATCGCCCAGCTGCCCGGCGAGAAGAAGAACGGCCTGTTCGGCAAC
Clone-2    661 CGCCTGGAGAACCTGATCGCCCAGCTGCCCGGCGAGAAGAAGAACGGCCTGTTCGGCAAC
Clone-3    661 CGCCTGGAGAACCTGATCGCCCAGCTGCCCGGCGAGAAGAAGAACGGCCTGTTCGGCAAC
WT-Cas9    661 CGCCTGGAGAACCTGATCGCCCAGCTGCCCGGCGAGAAGAAGAACGGCCTGTTCGGCAAC
eSpCas9    661 CGCCTGGAGAACCTGATCGCCCAGCTGCCCGGCGAGAAGAAGAACGGCCTGTTCGGCAAC
Cas9-HF1   661 CGCCTGGAGAACCTGATCGCCCAGCTGCCCGGCGAGAAGAAGAACGGCCTGTTCGGCAAC
evo-Cas9   661 CGCCTGGAGAACCTGATCGCCCAGCTGCCCGGCGAGAAGAAGAACGGCCTGTTCGGCAAC
Hypa-Cas9  661 CGCCTGGAGAACCTGATCGCCCAGCTGCCCGGCGAGAAGAAGAACGGCCTGTTCGGCAAC
xCas9-3.7  661 CGCCTGGAGAACCTGATCGCCCAGCTGCCCGGCGAGAAGAAGAACGGCCTGTTCGGCAAC
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Clone-1    721 CTGATCGCCCTGAGCCTGGGCCTGACCCCCAACTTCAAGAGCAACTTCGACCTGGCCGAG
Clone-2    721 CTGATCGCCCTGAGCCTGGGCCTGACCCCCAACTTCAAGAGCAACTTCGACCTGGCCGAG
Clone-3    721 CTGATCGCCCTGAGCCTGGGCCTGACCCCCAACTTCAAGAGCAACTTCGACCTGGCCGAG
WT-Cas9    721 CTGATCGCCCTGAGCCTGGGCCTGACCCCCAACTTCAAGAGCAACTTCGACCTGGCCGAG
eSpCas9    721 CTGATCGCCCTGAGCCTGGGCCTGACCCCCAACTTCAAGAGCAACTTCGACCTGGCCGAG
Cas9-HF1   721 CTGATCGCCCTGAGCCTGGGCCTGACCCCCAACTTCAAGAGCAACTTCGACCTGGCCGAG
evo-Cas9   721 CTGATCGCCCTGAGCCTGGGCCTGACCCCCAACTTCAAGAGCAACTTCGACCTGGCCGAG
Hypa-Cas9  721 CTGATCGCCCTGAGCCTGGGCCTGACCCCCAACTTCAAGAGCAACTTCGACCTGGCCGAG
xCas9-3.7  721 CTGATCGCCCTGAGCCTGGGCCTGACCCCCAACTTCAAGAGCAACTTCGACCTGGCCGAG

Clone-1    781 GACGCCAAGCTGCAGCTGAGCAAGGACACCTACGACGACGACCTGGACAACCTGCTGGCC
Clone-2    781 GACGCCAAGCTGCAGCTGAGCAAGGACACCTACGACGACGACCTGGACAACCTGCTGGCC
Clone-3    781 GACGCCAAGCTGCAGCTGAGCAAGGACACCTACGACGACGACCTGGACCACCTGCTGGCT
WT-Cas9    781 GACGCCAAGCTGCAGCTGAGCAAGGACACCTACGACGACGACCTGGACAACCTGCTGGCC
eSpCas9    781 GACGCCAAGCTGCAGCTGAGCAAGGACACCTACGACGACGACCTGGACAACCTGCTGGCC
Cas9-HF1   781 GACGCCAAGCTGCAGCTGAGCAAGGACACCTACGACGACGACCTGGACAACCTGCTGGCC
evo-Cas9   781 GACGCCAAGCTGCAGCTGAGCAAGGACACCTACGACGACGACCTGGACAACCTGCTGGCC
Hypa-Cas9  781 GACGCCAAGCTGCAGCTGAGCAAGGACACCTACGACGACGACCTGGACAACCTGCTGGCC
xCas9-3.7  781 GACACCAAGCTGCAGCTGAGCAAGGACACCTACGACGACGACCTGGACAACCTGCTGGCC

Clone-1    841 CAGATCGGCGACCAGTACGCCGACCTGTTCCTGGCCGCCAAGAACCTGAGCGACGCCATC
Clone-2    841 CAGATCGGCGACCAGTACGCCGACCTGTTCCTGGCCGCCAAGAACCTGAGCGACGCCATC
Clone-3    841 CAGATCGGCGACCAGTACGCCGACCTGTTCCTGGCCGCCAAGAACCTGAGCGACGCCATC
WT-Cas9    841 CAGATCGGCGACCAGTACGCCGACCTGTTCCTGGCCGCCAAGAACCTGAGCGACGCCATC
eSpCas9    841 CAGATCGGCGACCAGTACGCCGACCTGTTCCTGGCCGCCAAGAACCTGAGCGACGCCATC
Cas9-HF1   841 CAGATCGGCGACCAGTACGCCGACCTGTTCCTGGCCGCCAAGAACCTGAGCGACGCCATC
evo-Cas9   841 CAGATCGGCGACCAGTACGCCGACCTGTTCCTGGCCGCCAAGAACCTGAGCGACGCCATC
Hypa-Cas9  841 CAGATCGGCGACCAGTACGCCGACCTGTTCCTGGCCGCCAAGAACCTGAGCGACGCCATC
xCas9-3.7  841 CAGATCGGCGACCAGTACGCCGACCTGTTCCTGGCCGCCAAGAACCTGAGCGACGCCATC

Clone-1    901 CTGCTGAGCGACATCCTGCGCGTGAACACCGAGATCACCAAGGCCCCCCTGAGCGCCAGC
Clone-2    901 CTGCTGAGCGACATCCTGCGCGTGAACACCGAGATCACCAAGGCCCCCCTGAGCGCCAGC
Clone-3    901 CTGCTGAGCGACATCCTGCGCGTGAACACCGAGATCACCAAGGCCCCCCTGAGCGCCAGC
WT-Cas9    901 CTGCTGAGCGACATCCTGCGCGTGAACACCGAGATCACCAAGGCCCCCCTGAGCGCCAGC
eSpCas9    901 CTGCTGAGCGACATCCTGCGCGTGAACACCGAGATCACCAAGGCCCCCCTGAGCGCCAGC
Cas9-HF1   901 CTGCTGAGCGACATCCTGCGCGTGAACACCGAGATCACCAAGGCCCCCCTGAGCGCCAGC
evo-Cas9   901 CTGCTGAGCGACATCCTGCGCGTGAACACCGAGATCACCAAGGCCCCCCTGAGCGCCAGC
Hypa-Cas9  901 CTGCTGAGCGACATCCTGCGCGTGAACACCGAGATCACCAAGGCCCCCCTGAGCGCCAGC
xCas9-3.7  901 CTGCTGAGCGACATCCTGCGCGTGAACACCGAGATCACCAAGGCCCCCCTGAGCGCCAGC

Clone-1    961 ATGATCAAGCGCTACGACGAGCACCACCAGGACCTGACCCTGCTGAAGGCCCTGGTGCGC
Clone-2    961 ATGATCAAGCGCTACGACGAGCACCACCAGGACCTGACCCTGCTGAAGGCCCTGGTGCGC
Clone-3    961 ATGATCAAGCGCTACGACGAGCACCACCAGGACCTGACCCTGCTGAAGGCCCTGGTGCGC
WT-Cas9    961 ATGATCAAGCGCTACGACGAGCACCACCAGGACCTGACCCTGCTGAAGGCCCTGGTGCGC
eSpCas9    961 ATGATCAAGCGCTACGACGAGCACCACCAGGACCTGACCCTGCTGAAGGCCCTGGTGCGC
Cas9-HF1   961 ATGATCAAGCGCTACGACGAGCACCACCAGGACCTGACCCTGCTGAAGGCCCTGGTGCGC
evo-Cas9   961 ATGATCAAGCGCTACGACGAGCACCACCAGGACCTGACCCTGCTGAAGGCCCTGGTGCGC
Hypa-Cas9  961 ATGATCAAGCGCTACGACGAGCACCACCAGGACCTGACCCTGCTGAAGGCCCTGGTGCGC
xCas9-3.7  961 ATGATCAAGCTGTACGACGAGCACCACCAGGACCTGACCCTGCTGAAGGCCCTGGTGCGC

Clone-1   1021 CAGCAGCTGCCCGAGAAGTACAAGGAGATCTTCTTCGACCAGAGCAAGAACGGCTACGCC
Clone-2   1021 CAGCAGCTGCCCGAGAAGTACAAGGAGATCTTCTTCGACCAGAGCAAGAACGGCTACGCC
Clone-3   1021 CAGCAGCTGCCCGAGAAGTACAAGGAGATCTTCTTCGACCAGAGCAAGAACGGCTACGCC
WT-Cas9   1021 CAGCAGCTGCCCGAGAAGTACAAGGAGATCTTCTTCGACCAGAGCAAGAACGGCTACGCC
eSpCas9   1021 CAGCAGCTGCCCGAGAAGTACAAGGAGATCTTCTTCGACCAGAGCAAGAACGGCTACGCC
Cas9-HF1  1021 CAGCAGCTGCCCGAGAAGTACAAGGAGATCTTCTTCGACCAGAGCAAGAACGGCTACGCC
evo-Cas9  1021 CAGCAGCTGCCCGAGAAGTACAAGGAGATCTTCTTCGACCAGAGCAAGAACGGCTACGCC
Hypa-Cas9 1021 CAGCAGCTGCCCGAGAAGTACAAGGAGATCTTCTTCGACCAGAGCAAGAACGGCTACGCC
xCas9-3.7 1021 CAGCAGCTGCCCGAGAAGTACAAGGAGATCTTCTTCGACCAGAGCAAGAACGGCTACGCC
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Clone-1   1081 GGCTACATCGACGGCGGCGCCAGCCAGGAGGAGTTCTACAAGTTCATCAAGCCCATCCTG
Clone-2   1081 GGCTACATCGACGGCGGCGCCAGCCAGGAGGAGTTCTACAAGTTCATCAAGCCCATCCTG
Clone-3   1081 GGCTACATCGACGGCAGCGCCAGCCAGGAGGAGTTCTACAAGTTCATCAAGCCCATCCTG
WT-Cas9   1081 GGCTACATCGACGGCGGCGCCAGCCAGGAGGAGTTCTACAAGTTCATCAAGCCCATCCTG
eSpCas9   1081 GGCTACATCGACGGCGGCGCCAGCCAGGAGGAGTTCTACAAGTTCATCAAGCCCATCCTG
Cas9-HF1  1081 GGCTACATCGACGGCGGCGCCAGCCAGGAGGAGTTCTACAAGTTCATCAAGCCCATCCTG
evo-Cas9  1081 GGCTACATCGACGGCGGCGCCAGCCAGGAGGAGTTCTACAAGTTCATCAAGCCCATCCTG
Hypa-Cas9 1081 GGCTACATCGACGGCGGCGCCAGCCAGGAGGAGTTCTACAAGTTCATCAAGCCCATCCTG
xCas9-3.7 1081 GGCTACATCGACGGCGGCGCCAGCCAGGAGGAGTTCTACAAGTTCATCAAGCCCATCCTG

Clone-1   1141 GAGAAGATGGACGGCACCGAGGAGCTGCTGGTGAAGCTGAACCGCGAGGACCTGCTGCGC
Clone-2   1141 GAGAAGATGGACGGCACCGAGGAGCTGCTGGTGAAGCTGAACCGCGAGGACCTGCTGCGC
Clone-3   1141 GAGAAGATGGACGGCACCGAGGAGCTGCTGGTGAAGCTGAACCGCGAGGACCTGCTGCGC
WT-Cas9   1141 GAGAAGATGGACGGCACCGAGGAGCTGCTGGTGAAGCTGAACCGCGAGGACCTGCTGCGC
eSpCas9   1141 GAGAAGATGGACGGCACCGAGGAGCTGCTGGTGAAGCTGAACCGCGAGGACCTGCTGCGC
Cas9-HF1  1141 GAGAAGATGGACGGCACCGAGGAGCTGCTGGTGAAGCTGAACCGCGAGGACCTGCTGCGC
evo-Cas9  1141 GAGAAGATGGACGGCACCGAGGAGCTGCTGGTGAAGCTGAACCGCGAGGACCTGCTGCGC
Hypa-Cas9 1141 GAGAAGATGGACGGCACCGAGGAGCTGCTGGTGAAGCTGAACCGCGAGGACCTGCTGCGC
xCas9-3.7 1141 GAGAAGATGGACGGCACCGAGGAGCTGCTGGTGAAGCTGAACCGCGAGGACCTGCTGCGC

Clone-1   1201 AAGCAGCGCACCTTCGACAACGGCAGCATCCCCCACCAGATCCACCTGGGCGAGCTGCAC
Clone-2   1201 AAGCAGCGCACATTCGACAATGGCAGCATCCCCCACCAGATCCACCTGGGCGAGCTGCAC
Clone-3   1201 AAGCAGCGCACCTTCGACAACGGCAGCATCCCCCACCAGATCCACCTGGGCGAGCTGCAC
WT-Cas9   1201 AAGCAGCGCACCTTCGACAACGGCAGCATCCCCCACCAGATCCACCTGGGCGAGCTGCAC
eSpCas9   1201 AAGCAGCGCACCTTCGACAACGGCAGCATCCCCCACCAGATCCACCTGGGCGAGCTGCAC
Cas9-HF1  1201 AAGCAGCGCACCTTCGACAACGGCAGCATCCCCCACCAGATCCACCTGGGCGAGCTGCAC
evo-Cas9  1201 AAGCAGCGCACCTTCGACAACGGCAGCATCCCCCACCAGATCCACCTGGGCGAGCTGCAC
Hypa-Cas9 1201 AAGCAGCGCACCTTCGACAACGGCAGCATCCCCCACCAGATCCACCTGGGCGAGCTGCAC
xCas9-3.7 1201 AAGCAGCGCACCTTCGACAACGGCATCATCCCCCACCAGATCCACCTGGGCGAGCTGCAC

Clone-1   1261 GCCATCCTGCGCCGCCAGGAGGACTTCTACCCCTTCCTGAAGGACAACCGCGAGAAGATC
Clone-2   1261 GCCATCCTGCGCCGCCAGGAGGACTTCTACCCCTTCCTGAAGGACAACCGCGAGAAGATC
Clone-3   1261 GCCATCCTGCGCCGCCAGGAGGACTTCTACCCCTTCCTGAAGGACAACCGCGAGAAGATC
WT-Cas9   1261 GCCATCCTGCGCCGCCAGGAGGACTTCTACCCCTTCCTGAAGGACAACCGCGAGAAGATC
eSpCas9   1261 GCCATCCTGCGCCGCCAGGAGGACTTCTACCCCTTCCTGAAGGACAACCGCGAGAAGATC
Cas9-HF1  1261 GCCATCCTGCGCCGCCAGGAGGACTTCTACCCCTTCCTGAAGGACAACCGCGAGAAGATC
evo-Cas9  1261 GCCATCCTGCGCCGCCAGGAGGACTTCTACCCCTTCCTGAAGGACAACCGCGAGAAGATC
Hypa-Cas9 1261 GCCATCCTGCGCCGCCAGGAGGACTTCTACCCCTTCCTGAAGGACAACCGCGAGAAGATC
xCas9-3.7 1261 GCCATCCTGCGCCGCCAGGAGGACTTCTACCCCTTCCTGAAGGACAACCGCGAGAAGATC

Clone-1   1321 GAGAAGATCCTGACCTTCCGCATCCCCTACTACGTGGGCCCCCTGGCCCGCGGCAACAGC
Clone-2   1321 GAGAAGATCCTGACCTTCCGCATCCCCTACTACGTGGGCCCCCTGGCCCGCGGCAACAGC
Clone-3   1321 GAGAAGATCCTGACCTTCCGCATCCCCTACTACGTGGGCCCCCTGGCCCGCGGCAACAGC
WT-Cas9   1321 GAGAAGATCCTGACCTTCCGCATCCCCTACTACGTGGGCCCCCTGGCCCGCGGCAACAGC
eSpCas9   1321 GAGAAGATCCTGACCTTCCGCATCCCCTACTACGTGGGCCCCCTGGCCCGCGGCAACAGC
Cas9-HF1  1321 GAGAAGATCCTGACCTTCCGCATCCCCTACTACGTGGGCCCCCTGGCCCGCGGCAACAGC
evo-Cas9  1321 GAGAAGATCCTGACCTTCCGCATCCCCTACTACGTGGGCCCCCTGGCCCGCGGCAACAGC
Hypa-Cas9 1321 GAGAAGATCCTGACCTTCCGCATCCCCTACTACGTGGGCCCCCTGGCCCGCGGCAACAGC
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Clone-1   1381 CGCTTCGCCTGGATGACCCGCAAGAGCGAGGAGACCATCACCCCCTGGAACTTCGAGGAG
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WT-Cas9   1381 CGCTTCGCCTGGATGACCCGCAAGAGCGAGGAGACCATCACCCCCTGGAACTTCGAGGAG
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Cas9-HF1  1381 CGCTTCGCCTGGATGACCCGCAAGAGCGAGGAGACCATCACCCCCTGGAACTTCGAGGAG
evo-Cas9  1381 CGCTTCGCCTGGATGACCCGCAAGAGCGAGGAGACCATCACCCCCTGGAACTTCGAGGAG
Hypa-Cas9 1381 CGCTTCGCCTGGATGACCCGCAAGAGCGAGGAGACCATCACCCCCTGGAACTTCGAGGAG
xCas9-3.7 1381 CGCTTCGCCTGGATGACCCGCAAGAGCGAGGAGACCATCACCCCCTGGAACTTCGAGAAG
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WT-Cas9   1441 GTGGTGGACAAGGGCGCCAGCGCCCAGAGCTTCATCGAGCGCATGACCAACTTCGACAAG
eSpCas9   1441 GTGGTGGACAAGGGCGCCAGCGCCCAGAGCTTCATCGAGCGCATGACCAACTTCGACAAG
Cas9-HF1  1441 GTGGTGGACAAGGGCGCCAGCGCCCAGAGCTTCATCGAGCGCATGACCGCCTTCGACAAG
evo-Cas9  1441 GTGGTGGACAAGGGCGCCAGCGCCCAGAGCTTCATCGAGCGCGTGACCAACTTCGACAAG
Hypa-Cas9 1441 GTGGTGGACAAGGGCGCCAGCGCCCAGAGCTTCATCGAGCGCATGACCAACTTCGACAAG
xCas9-3.7 1441 GTGGTGGACAAGGGCGCCAGCGCCCAGAGCTTCATCGAGCGCATGACCAACTTCGACAAG

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Clone-3   1501 AACCTGCCCAACGAGAAGGTGCTGCCCAAGCACAGCCTGCTGTACGAGTACTTCACCGTG
WT-Cas9   1501 AACCTGCCCAACGAGAAGGTGCTGCCCAAGCACAGCCTGCTGTACGAGTACTTCACCGTG
eSpCas9   1501 AACCTGCCCAACGAGAAGGTGCTGCCCAAGCACAGCCTGCTGTACGAGTACTTCACCGTG
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evo-Cas9  1501 AACCTGCCCAACGAGAAGGTGCTGCCCAAGCACAGCCTGCTGAACGAGTACTTCACCGTG
Hypa-Cas9 1501 AACCTGCCCAACGAGAAGGTGCTGCCCAAGCACAGCCTGCTGTACGAGTACTTCACCGTG
xCas9-3.7 1501 AACCTGCCCAACGAGAAGGTGCTGCCCAAGCACAGCCTGCTGTACGAGTACTTCACCGTG

Clone-1   1561 TACAACGAGCTGACCAAGGTGAAGTACGTGACCGAGGGCATGCGCAAGCCCGCCTCCCTG
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WT-Cas9   1561 TACAACGAGCTGACCAAGGTGAAGTACGTGACCGAGGGCATGCGCAAGCCCGCCTTCCTG
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evo-Cas9  1561 TACAACGAGCTGACCAAGGAGAAGTACGTGACCGAGGGCATGCGCAAGCCCGCCTTCCTG
Hypa-Cas9 1561 TACAACGAGCTGACCAAGGTGAAGTACGTGACCGAGGGCATGCGCAAGCCCGCCTTCCTG
xCas9-3.7 1561 TACAACGAGCTGACCAAGGTGAAGTACGTGACCGAGGGCATGCGCAAGCCCGCCTTCCTG

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Clone-3   1621 AGCGGCGAGCAGAAGAAGGCCATCGTGGACCTGCTGTTCAAGACCAACCGCAAGGTGACC
WT-Cas9   1621 AGCGGCGAGCAGAAGAAGGCCATCGTGGACCTGCTGTTCAAGACCAACCGCAAGGTGACC
eSpCas9   1621 AGCGGCGAGCAGAAGAAGGCCATCGTGGACCTGCTGTTCAAGACCAACCGCAAGGTGACC
Cas9-HF1  1621 AGCGGCGAGCAGAAGAAGGCCATCGTGGACCTGCTGTTCAAGACCAACCGCAAGGTGACC
evo-Cas9  1621 AGCGGCGAGCAGAAGAAGGCCATCGTGGACCTGCTGTTCAAGACCAACCGCAAGGTGACC
Hypa-Cas9 1621 AGCGGCGAGCAGAAGAAGGCCATCGTGGACCTGCTGTTCAAGACCAACCGCAAGGTGACC
xCas9-3.7 1621 AGCGGCGACCAGAAGAAGGCCATCGTGGACCTGCTGTTCAAGACCAACCGCAAGGTGACC

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Clone-3   1681 GTGAAGCAGCTGAAGGAGGACTACTTCAAGAAGATCGAGTGCTTCGACAGCGTGGAGATC
WT-Cas9   1681 GTGAAGCAGCTGAAGGAGGACTACTTCAAGAAGATCGAGTGCTTCGACAGCGTGGAGATC
eSpCas9   1681 GTGAAGCAGCTGAAGGAGGACTACTTCAAGAAGATCGAGTGCTTCGACAGCGTGGAGATC
Cas9-HF1  1681 GTGAAGCAGCTGAAGGAGGACTACTTCAAGAAGATCGAGTGCTTCGACAGCGTGGAGATC
evo-Cas9  1681 GTGAAGCAGCTGAAGGAGGACTACTTCAAGAAGATCGAGTGCTTCGACAGCGTGGAGATC
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Clone-1   1741 AGCGGCGTGGAGGACCGCTTCAACGCCAGCCTGGGCACCTACCACGACCTGCTGAAGATC
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Clone-3   1741 AGCGGCGTGGAGGACCGCTTCAACGCCAGCCTGGGCACCTACCACGACCTGCTGAAGATC
WT-Cas9   1741 AGCGGCGTGGAGGACCGCTTCAACGCCAGCCTGGGCACCTACCACGACCTGCTGAAGATC
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WT-Cas9   1801 ATCAAGGACAAGGACTTCCTGGACAACGAGGAGAACGAGGACATCCTGGAGGACATCGTG
eSpCas9   1801 ATCAAGGACAAGGACTTCCTGGACAACGAGGAGAACGAGGACATCCTGGAGGACATCGTG
Cas9-HF1  1801 ATCAAGGACAAGGACTTCCTGGACAACGAGGAGAACGAGGACATCCTGGAGGACATCGTG
evo-Cas9  1801 ATCAAGGACAAGGACTTCCTGGACAACGAGGAGAACGAGGACATCCTGGAGGACATCGTG
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Cas9-HF1  1861 CTGACCCTGACCCTGTTCGAGGACCGCGAGATGATCGAGGAGCGCCTGAAGACCTACGCC
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Clone-1   1921 CACCTGTTCGACGACAAGGTGATGAAGCAGCTGAAGCGCCGCCGCTACACCGGCTGGGGC
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Clone-3   1921 CACCTGTTCGACGACAAGGTGATGAAGCAGCTGAAGCGCCGCCGCTACACCGGCTGGGGC
WT-Cas9   1921 CACCTGTTCGACGACAAGGTGATGAAGCAGCTGAAGCGCCGCCGCTACACCGGCTGGGGC
eSpCas9   1921 CACCTGTTCGACGACAAGGTGATGAAGCAGCTGAAGCGCCGCCGCTACACCGGCTGGGGC
Cas9-HF1  1921 CACCTGTTCGACGACAAGGTGATGAAGCAGCTGAAGCGCCGCCGCTACACCGGCTGGGGC
evo-Cas9  1921 CACCTGTTCGACGACAAGGTGATGAAGCAGCTGAAGCGCCGCCGCTACACCGGCTGGGGC
Hypa-Cas9 1921 CACCTGTTCGACGACAAGGTGATGAAGCAGCTGAAGCGCCGCCGCTACACCGGCTGGGGC
xCas9-3.7 1921 CACCTGTTCGACGACAAGGTGATGAAGCAGCTGAAGCGCCGCCGCTACACCGGCTGGGGC

Clone-1   1981 CGCCTGAGCCGCAAGCTTATCAACGGCATCCGCGACAAGCAGAGCGGCAAGACCATCCTG
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WT-Cas9   2161 CACGAGCACATCGCCAACCTGGCCGGCAGCCCCGCCATCAAGAAGGGCATCCTGCAGACC
eSpCas9   2161 CACGAGCACATCGCCAACCTGGCCGGCAGCCCCGCCATCAAGAAGGGCATCCTGCAGACC
Cas9-HF1  2161 CACGAGCACATCGCCAACCTGGCCGGCAGCCCCGCCATCAAGAAGGGCATCCTGCAGACC
evo-Cas9  2161 CACGAGCACATCGCCAACCTGGCCGGCAGCCCCGCCATCAAGAAGGGCATCCTGCAGACC
Hypa-Cas9 2161 CACGAGCACATCGCCAACCTGGCCGGCAGCCCCGCCATCAAGAAGGGCATCCTGCAGACC
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Clone-3   2221 GTGAAGGTGGTGGACGAGCTGGTGAAGGTGATGGGCCGCCACAAGCCCGAGAACATCGTG
WT-Cas9   2221 GTGAAGGTGGTGGACGAGCTGGTGAAGGTGATGGGCCGCCACAAGCCCGAGAACATCGTG
eSpCas9   2221 GTGAAGGTGGTGGACGAGCTGGTGAAGGTGATGGGCCGCCACAAGCCCGAGAACATCGTG
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evo-Cas9  2221 GTGAAGGTGGTGGACGAGCTGGTGAAGGTGATGGGCCGCCACAAGCCCGAGAACATCGTG
Hypa-Cas9 2221 GTGAAGGTGGTGGACGAGCTGGTGAAGGTGATGGGCCGCCACAAGCCCGAGAACATCGTG
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Hypa-Cas9 2341 ATGAAGCGCATCGAGGAGGGCATCAAGGAGCTGGGCAGCCAGATCCTGAAGGAGCACCCC
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Hypa-Cas9 2461 GACATGTACGTGGACCAGGAGCTGGACATCAACCGCCTGAGCGACTACGACGTGGACCAC
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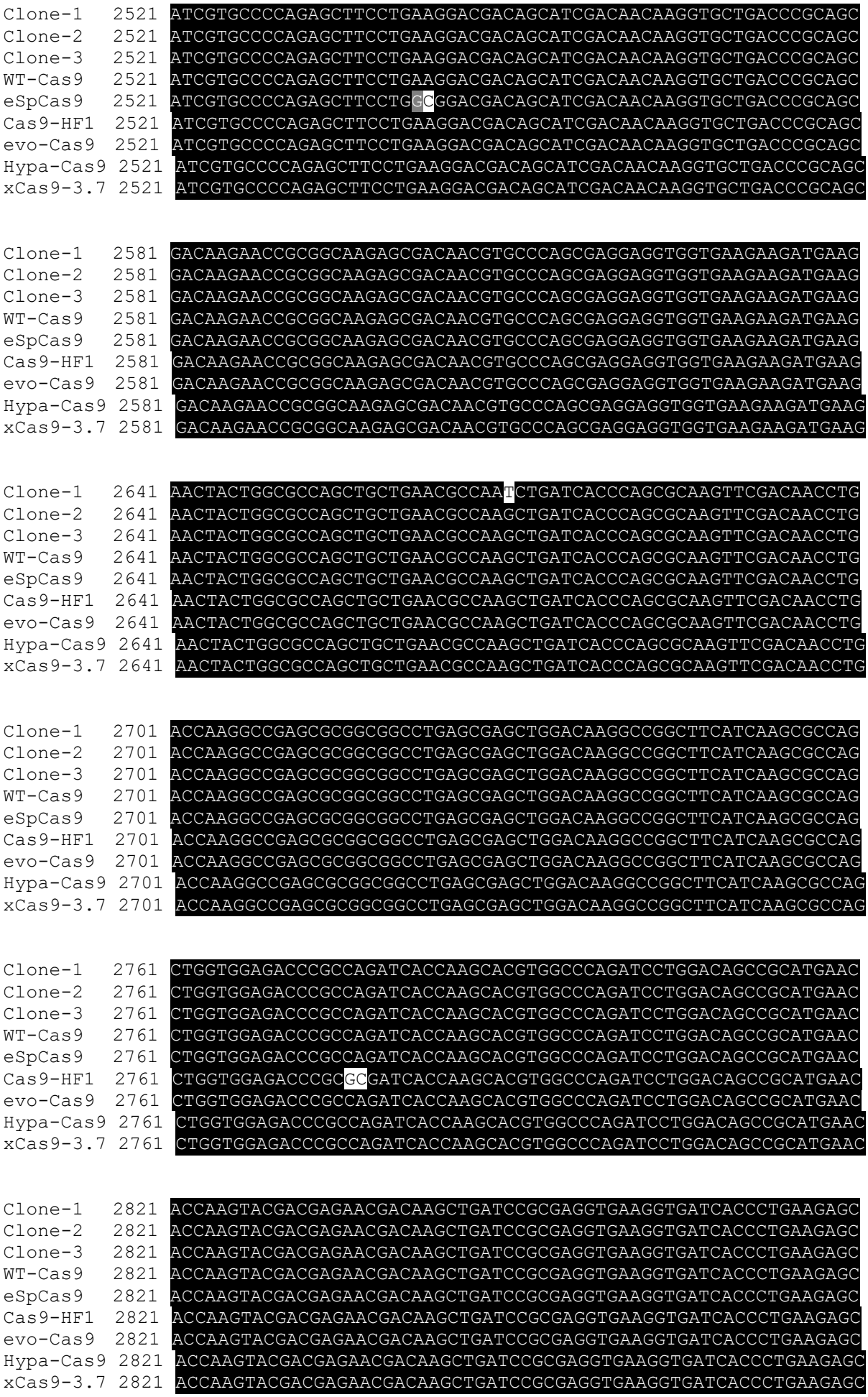
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Clone-3 2521 ATCGTGCCCCAGAGCTTCCTGAAGGACGACAGCATCGACAACAAGGTGCTGACCCGCAGC
WT-Cas9 2521 ATCGTGCCCCAGAGCTTCCTGAAGGACGACAGCATCGACAACAAGGTGCTGACCCGCAGC
eSpCas9 2521 ATCGTGCCCCAGAGCTTCCTGGCGGACGACAGCATCGACAACAAGGTGCTGACCCGCAGC
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xCas9-3.7 2521 ATCGTGCCCCAGAGCTTCCTGAAGGACGACAGCATCGACAACAAGGTGCTGACCCGCAGC
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Clone-2 2581 GACAAGAACCGCGGCAAGAGCGACAACGTGCCCAGCGAGGAGGTGGTGAAGAAGATGAAG
Clone-3 2581 GACAAGAACCGCGGCAAGAGCGACAACGTGCCCAGCGAGGAGGTGGTGAAGAAGATGAAG
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Cas9-HF1 2701 ACCAAGGCCGAGCGCGGCGGCCTGAGCGAGCTGGACAAGGCCGGCTTCATCAAGCGCCAG
evo-Cas9 2701 ACCAAGGCCGAGCGCGGCGGCCTGAGCGAGCTGGACAAGGCCGGCTTCATCAAGCGCCAG
Hypa-Cas9 2701 ACCAAGGCCGAGCGCGGCGGCCTGAGCGAGCTGGACAAGGCCGGCTTCATCAAGCGCCAG
xCas9-3.7 2701 ACCAAGGCCGAGCGCGGCGGCCTGAGCGAGCTGGACAAGGCCGGCTTCATCAAGCGCCAG
Clone-1 2761 CTGGTGGAGACCCGCCAGATCACCAAGCACGTGGCCCAGATCCTGGACAGCCGCATGAAC
Clone-2 2761 CTGGTGGAGACCCGCCAGATCACCAAGCACGTGGCCCAGATCCTGGACAGCCGCATGAAC
Clone-3 2761 CTGGTGGAGACCCGCCAGATCACCAAGCACGTGGCCCAGATCCTGGACAGCCGCATGAAC
WT-Cas9 2761 CTGGTGGAGACCCGCCAGATCACCAAGCACGTGGCCCAGATCCTGGACAGCCGCATGAAC
eSpCas9 2761 CTGGTGGAGACCCGCCAGATCACCAAGCACGTGGCCCAGATCCTGGACAGCCGCATGAAC
Cas9-HF1 2761 CTGGTGGAGACCCGCGCGATCACCAAGCACGTGGCCCAGATCCTGGACAGCCGCATGAAC
evo-Cas9 2761 CTGGTGGAGACCCGCCAGATCACCAAGCACGTGGCCCAGATCCTGGACAGCCGCATGAAC
Hypa-Cas9 2761 CTGGTGGAGACCCGCCAGATCACCAAGCACGTGGCCCAGATCCTGGACAGCCGCATGAAC
xCas9-3.7 2761 CTGGTGGAGACCCGCCAGATCACCAAGCACGTGGCCCAGATCCTGGACAGCCGCATGAAC
Clone-1 2821 ACCAAGTACGACGAGAACGACAAGCTGATCCGCGAGGTGAAGGTGATCACCCTGAAGAGC
Clone-2 2821 ACCAAGTACGACGAGAACGACAAGCTGATCCGCGAGGTGAAGGTGATCACCCTGAAGAGC
Clone-3 2821 ACCAAGTACGACGAGAACGACAAGCTGATCCGCGAGGTGAAGGTGATCACCCTGAAGAGC
WT-Cas9 2821 ACCAAGTACGACGAGAACGACAAGCTGATCCGCGAGGTGAAGGTGATCACCCTGAAGAGC
eSpCas9 2821 ACCAAGTACGACGAGAACGACAAGCTGATCCGCGAGGTGAAGGTGATCACCCTGAAGAGC
Cas9-HF1 2821 ACCAAGTACGACGAGAACGACAAGCTGATCCGCGAGGTGAAGGTGATCACCCTGAAGAGC
evo-Cas9 2821 ACCAAGTACGACGAGAACGACAAGCTGATCCGCGAGGTGAAGGTGATCACCCTGAAGAGC
Hypa-Cas9 2821 ACCAAGTACGACGAGAACGACAAGCTGATCCGCGAGGTGAAGGTGATCACCCTGAAGAGC
xCas9-3.7 2821 ACCAAGTACGACGAGAACGACAAGCTGATCCGCGAGGTGAAGGTGATCACCCTGAAGAGC

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Clone-1   2881 AAGCTGGTGAGCGACTTCCGCAAGGACTTCCAGTTCTACAAGGTGCGCGAGATCAACAAC
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Clone-3   2881 AAGCTGGTGAGCGACTTCCGCAAGGACTTCCAGTTCTACAAGGTGCGCGAGATCAACAAC
WT-Cas9   2881 AAGCTGGTGAGCGACTTCCGCAAGGACTTCCAGTTCTACAAGGTGCGCGAGATCAACAAC
eSpCas9   2881 AAGCTGGTGAGCGACTTCCGCAAGGACTTCCAGTTCTACAAGGTGCGCGAGATCAACAAC
Cas9-HF1  2881 AAGCTGGTGAGCGACTTCCGCAAGGACTTCCAGTTCTACAAGGTGCGCGAGATCAACAAC
evo-Cas9  2881 AAGCTGGTGAGCGACTTCCGCAAGGACTTCCAGTTCTACAAGGTGCGCGAGATCAACAAC
Hypa-Cas9 2881 AAGCTGGTGAGCGACTTCCGCAAGGACTTCCAGTTCTACAAGGTGCGCGAGATCAACAAC
xCas9-3.7 2881 AAGCTGGTGAGCGACTTCCGCAAGGACTTCCAGTTCTACAAGGTGCGCGAGATCAACAAC

Clone-1   2941 TACCACCACGCCCACGACGCCTACCTGAACGCCGTGGTGGGCACCGCCCTGATCAAGAAG
Clone-2   2941 TACCACCACGCCCACGACGCCTACCTGAACGCCGTGGTGGGCACCGCCCTGATCAAGAAG
Clone-3   2941 TACCACCACGCCCACGACGCCTACCTGAACGCCGTGGTGGGCACCGCCCTGATCAAGAAG
WT-Cas9   2941 TACCACCACGCCCACGACGCCTACCTGAACGCCGTGGTGGGCACCGCCCTGATCAAGAAG
eSpCas9   2941 TACCACCACGCCCACGACGCCTACCTGAACGCCGTGGTGGGCACCGCCCTGATCAAGAAG
Cas9-HF1  2941 TACCACCACGCCCACGACGCCTACCTGAACGCCGTGGTGGGCACCGCCCTGATCAAGAAG
evo-Cas9  2941 TACCACCACGCCCACGACGCCTACCTGAACGCCGTGGTGGGCACCGCCCTGATCAAGAAG
Hypa-Cas9 2941 TACCACCACGCCCACGACGCCTACCTGAACGCCGTGGTGGGCACCGCCCTGATCAAGAAG
xCas9-3.7 2941 TACCACCACGCCCACGACGCCTACCTGAACGCCGTGGTGGGCACCGCCCTGATCAAGAAG

Clone-1   3001 TACCCCAAGCTGGAGAGCGAGTTCGTGTACGGCGACTACAAGGTATACGACGTGCGCAAG
Clone-2   3001 TACCCCAAGCTGGAGAGCGAGTTCGTGTACGGCGACTACAAGGTGTACGACGTGCGCAAG
Clone-3   3001 TACCCCAAGCTGGAGAGCGAGTTCGTGTACGGCGACTACAAGGTGTACGACGTGCGCAAG
WT-Cas9   3001 TACCCCAAGCTGGAGAGCGAGTTCGTGTACGGCGACTACAAGGTGTACGACGTGCGCAAG
eSpCas9   3001 TACCCCGCGCTGGAGAGCGAGTTCGTGTACGGCGACTACAAGGTGTACGACGTGCGCAAG
Cas9-HF1  3001 TACCCCAAGCTGGAGAGCGAGTTCGTGTACGGCGACTACAAGGTGTACGACGTGCGCAAG
evo-Cas9  3001 TACCCCAAGCTGGAGAGCGAGTTCGTGTACGGCGACTACAAGGTGTACGACGTGCGCAAG
Hypa-Cas9 3001 TACCCCAAGCTGGAGAGCGAGTTCGTGTACGGCGACTACAAGGTGTACGACGTGCGCAAG
xCas9-3.7 3001 TACCCCAAGCTGGAGAGCGAGTTCGTGTACGGCGACTACAAGGTGTACGACGTGCGCAAG

Clone-1   3061 ATGATCGCTAAGAGCGAGCAGGAGATCGGCAAGGCCACCGCCAAGTACTTCTTCTACAGC
Clone-2   3061 ATGATCGCCAAGAGCGAGCAGGAGATCGGCAAGGCCACCGCCAAGTACTTCTTCTACAGC
Clone-3   3061 ATGATCGCCAAGAGCGAGCAGGAGATCGGCAAGGCCACCGCCAAGTACTTCTACTACAGC
WT-Cas9   3061 ATGATCGCCAAGAGCGAGCAGGAGATCGGCAAGGCCACCGCCAAGTACTTCTTCTACAGC
eSpCas9   3061 ATGATCGCCAAGAGCGAGCAGGAGATCGGCAAGGCCACCGCCAAGTACTTCTTCTACAGC
Cas9-HF1  3061 ATGATCGCCAAGAGCGAGCAGGAGATCGGCAAGGCCACCGCCAAGTACTTCTTCTACAGC
evo-Cas9  3061 ATGATCGCCAAGAGCGAGCAGGAGATCGGCAAGGCCACCGCCAAGTACTTCTTCTACAGC
Hypa-Cas9 3061 ATGATCGCCAAGAGCGAGCAGGAGATCGGCAAGGCCACCGCCAAGTACTTCTTCTACAGC
xCas9-3.7 3061 ATGATCGCCAAGAGCGAGCAGGAGATCGGCAAGGCCACCGCCAAGTACTTCTTCTACAGC

Clone-1   3121 AACATCATGAACTTCTTCAAGACCGAGATCACCCTGGCCAACGGCGAGATCCGCAAGCGC
Clone-2   3121 AACATCATGAACTTCTTCAAGACCGAGATCACCCTGGCCAACGGCGAGATCCGCAAGCGC
Clone-3   3121 AACATCATGAACTTCTTCAAGACCGAGATCACCCTGGCCAACGGCGAGATCCGCAAGCGC
WT-Cas9   3121 AACATCATGAACTTCTTCAAGACCGAGATCACCCTGGCCAACGGCGAGATCCGCAAGCGC
eSpCas9   3121 AACATCATGAACTTCTTCAAGACCGAGATCACCCTGGCCAACGGCGAGATCCGCAAGGCC
Cas9-HF1  3121 AACATCATGAACTTCTTCAAGACCGAGATCACCCTGGCCAACGGCGAGATCCGCAAGCGC
evo-Cas9  3121 AACATCATGAACTTCTTCAAGACCGAGATCACCCTGGCCAACGGCGAGATCCGCAAGCGC
Hypa-Cas9 3121 AACATCATGAACTTCTTCAAGACCGAGATCACCCTGGCCAACGGCGAGATCCGCAAGCGC
xCas9-3.7 3121 AACATCATGAACTTCTTCAAGACCGAGATCACCCTGGCCAACGGCGAGATCCGCAAGCGC

Clone-1   3181 CCCCTGATCGAGACCAACGGCGAGACCGGCGAGATCGTGTGGGACAAGGGCCGCGACTTC
Clone-2   3181 CCCCTGATCGAGACCAACGGCGAGACCGGCGAGATCGTGTGGGACAAGGGCCGCGACTTC
Clone-3   3181 CCCCTGATCGAGACCAACGGCGAGACCGGCGAGATCGTGTGGGACAAGGGCCGCGACTTC
WT-Cas9   3181 CCCCTGATCGAGACCAACGGCGAGACCGGCGAGATCGTGTGGGACAAGGGCCGCGACTTC
eSpCas9   3181 CCCCTGATCGAGACCAACGGCGAGACCGGCGAGATCGTGTGGGACAAGGGCCGCGACTTC
Cas9-HF1  3181 CCCCTGATCGAGACCAACGGCGAGACCGGCGAGATCGTGTGGGACAAGGGCCGCGACTTC
evo-Cas9  3181 CCCCTGATCGAGACCAACGGCGAGACCGGCGAGATCGTGTGGGACAAGGGCCGCGACTTC
Hypa-Cas9 3181 CCCCTGATCGAGACCAACGGCGAGACCGGCGAGATCGTGTGGGACAAGGGCCGCGACTTC
xCas9-3.7 3181 CCCCTGATCGAGACCAACGGCGAGACCGGCGAGATCGTGTGGGACAAGGGCCGCGACTTC
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Clone-1   3241 GCCACCGTGCGCAAGGTGCTGAGCATGCCCCAGGTGAACATCGTGAAGAAGACCGAGGTG
Clone-2   3241 GCCACCGTGCGCAAGGTGCTGAGCATGCCCCAGGTGAACATCGTGAAGAAGACCGAGGTG
Clone-3   3241 GCCACCGTGCGCAAGGTGCTGAGCATGCCCCAGGTGAACATCGTGAAGAAGACCGAGGTG
WT-Cas9   3241 GCCACCGTGCGCAAGGTGCTGAGCATGCCCCAGGTGAACATCGTGAAGAAGACCGAGGTG
eSpCas9   3241 GCCACCGTGCGCAAGGTGCTGAGCATGCCCCAGGTGAACATCGTGAAGAAGACCGAGGTG
Cas9-HF1  3241 GCCACCGTGCGCAAGGTGCTGAGCATGCCCCAGGTGAACATCGTGAAGAAGACCGAGGTG
evo-Cas9  3241 GCCACCGTGCGCAAGGTGCTGAGCATGCCCCAGGTGAACATCGTGAAGAAGACCGAGGTG
Hypa-Cas9 3241 GCCACCGTGCGCAAGGTGCTGAGCATGCCCCAGGTGAACATCGTGAAGAAGACCGAGGTG
xCas9-3.7 3241 GCCACCGTGCGCAAGGTGCTGAGCATGCCCCAGGTGAACATCGTGAAGAAGACCGAGGTG

Clone-1   3301 CAGACCGGCGGCTTCAGCAAGGAGAGCATCCTGCCCAAGCGCAACAGCGACAAGCTGATC
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Clone-3   3301 CAGCCCGGCGGCTTCAGCAAGGAGAGCATTCTGCCCAAGCGCAACAGCGACAAGCTGATC
WT-Cas9   3301 CAGACCGGCGGCTTCAGCAAGGAGAGCATCCTGCCCAAGCGCAACAGCGACAAGCTGATC
eSpCas9   3301 CAGACCGGCGGCTTCAGCAAGGAGAGCATCCTGCCCAAGCGCAACAGCGACAAGCTGATC
Cas9-HF1  3301 CAGACCGGCGGCTTCAGCAAGGAGAGCATCCTGCCCAAGCGCAACAGCGACAAGCTGATC
evo-Cas9  3301 CAGACCGGCGGCTTCAGCAAGGAGAGCATCCTGCCCAAGCGCAACAGCGACAAGCTGATC
Hypa-Cas9 3301 CAGACCGGCGGCTTCAGCAAGGAGAGCATCCTGCCCAAGCGCAACAGCGACAAGCTGATC
xCas9-3.7 3301 CAGACCGGCGGCTTCAGCAAGGAGAGCATCCTGCCCAAGCGCAACAGCGACAAGCTGATC

Clone-1   3361 GCCCGCAAGAAGGACTGGGACCCCAAGAAGTACGGCGGCTTCGACAGCCCCACCGTGGCC
Clone-2   3361 GCCCGCAAGAAGGACTGGGACCCCAAGAAGTACGGCGGCTTCGACAGCCCCACCGTGGCC
Clone-3   3361 GCCCGCAAGAAGGACTGGGAACCCAAGAAGTACGGCGGCTTCGACAGCCCCACCGTGGCC
WT-Cas9   3361 GCCCGCAAGAAGGACTGGGACCCCAAGAAGTACGGCGGCTTCGACAGCCCCACCGTGGCC
eSpCas9   3361 GCCCGCAAGAAGGACTGGGACCCCAAGAAGTACGGCGGCTTCGACAGCCCCACCGTGGCC
Cas9-HF1  3361 GCCCGCAAGAAGGACTGGGACCCCAAGAAGTACGGCGGCTTCGACAGCCCCACCGTGGCC
evo-Cas9  3361 GCCCGCAAGAAGGACTGGGACCCCAAGAAGTACGGCGGCTTCGACAGCCCCACCGTGGCC
Hypa-Cas9 3361 GCCCGCAAGAAGGACTGGGACCCCAAGAAGTACGGCGGCTTCGACAGCCCCACCGTGGCC
xCas9-3.7 3361 GCCCGCAAGAAGGACTGGGACCCCAAGAAGTACGGCGGCTTCGACAGCCCCACCGTGGCC

Clone-1   3421 TACAGCGTGCTGGTGGTGGCCAAGGTGGAGAAGGGCAAGAGCAAGAAGCTGAAGAGCGTG
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Clone-3   3421 TACAGCGTGCTGGTGGTGGCCAAGGTGGAGAAGGGCAAGAGCAAGAAGCTGAAGAGCGTG
WT-Cas9   3421 TACAGCGTGCTGGTGGTGGCCAAGGTGGAGAAGGGCAAGAGCAAGAAGCTGAAGAGCGTG
eSpCas9   3421 TACAGCGTGCTGGTGGTGGCCAAGGTGGAGAAGGGCAAGAGCAAGAAGCTGAAGAGCGTG
Cas9-HF1  3421 TACAGCGTGCTGGTGGTGGCCAAGGTGGAGAAGGGCAAGAGCAAGAAGCTGAAGAGCGTG
evo-Cas9  3421 TACAGCGTGCTGGTGGTGGCCAAGGTGGAGAAGGGCAAGAGCAAGAAGCTGAAGAGCGTG
Hypa-Cas9 3421 TACAGCGTGCTGGTGGTGGCCAAGGTGGAGAAGGGCAAGAGCAAGAAGCTGAAGAGCGTG
xCas9-3.7 3421 TACAGCGTGCTGGTGGTGGCCAAGGTGGAGAAGGGCAAGAGCAAGAAGCTGAAGAGCGTG

Clone-1   3481 AAGGAGCTGCTGGGCATCACCATCATGGAGCGCAGCAGCTTCGAGAAGAACCCCATCGAC
Clone-2   3481 AAGGAGCTGCTGGGCATCACCATCATGGAGCGCAGCAGCTTCGAGAAGAACCCCATCGAC
Clone-3   3481 AAGGAGCTGCTGGGCATCACCATCATGGAGCGCAGCAGCTTCGAGAAGAACCCCATCGAC
WT-Cas9   3481 AAGGAGCTGCTGGGCATCACCATCATGGAGCGCAGCAGCTTCGAGAAGAACCCCATCGAC
eSpCas9   3481 AAGGAGCTGCTGGGCATCACCATCATGGAGCGCAGCAGCTTCGAGAAGAACCCCATCGAC
Cas9-HF1  3481 AAGGAGCTGCTGGGCATCACCATCATGGAGCGCAGCAGCTTCGAGAAGAACCCCATCGAC
evo-Cas9  3481 AAGGAGCTGCTGGGCATCACCATCATGGAGCGCAGCAGCTTCGAGAAGAACCCCATCGAC
Hypa-Cas9 3481 AAGGAGCTGCTGGGCATCACCATCATGGAGCGCAGCAGCTTCGAGAAGAACCCCATCGAC
xCas9-3.7 3481 AAGGAGCTGCTGGGCATCACCATCATGGAGCGCAGCAGCTTCGAGAAGAACCCCATCGAC

Clone-1   3541 TTCCTGGAGGCCAAGGGCTACAAGGAGGTGAAGAAGGACCTGATCATCAAGCTGCCCAAG
Clone-2   3541 TTCCTGGAGGCCAAGGGCTACAAGGAGGTGAAGAAGGACCTGATCATCAAGCTGCCCAAG
Clone-3   3541 TTCCTGGAGGCCAAGGGCTACAAGGAGGTGAAGAAGGACCTGATCATCAAGCTGCCCAAG
WT-Cas9   3541 TTCCTGGAGGCCAAGGGCTACAAGGAGGTGAAGAAGGACCTGATCATCAAGCTGCCCAAG
eSpCas9   3541 TTCCTGGAGGCCAAGGGCTACAAGGAGGTGAAGAAGGACCTGATCATCAAGCTGCCCAAG
Cas9-HF1  3541 TTCCTGGAGGCCAAGGGCTACAAGGAGGTGAAGAAGGACCTGATCATCAAGCTGCCCAAG
evo-Cas9  3541 TTCCTGGAGGCCAAGGGCTACAAGGAGGTGAAGAAGGACCTGATCATCAAGCTGCCCAAG
Hypa-Cas9 3541 TTCCTGGAGGCCAAGGGCTACAAGGAGGTGAAGAAGGACCTGATCATCAAGCTGCCCAAG
xCas9-3.7 3541 TTCCTGGAGGCCAAGGGCTACAAGGAGGTGAAGAAGGACCTGATCATCAAGCTGCCCAAG
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Clone-2   3601 TACAGCCTGTTCGAGCTGGAGAACGGCCGCAAGCGCATGCTGGCCAGCGCCGGCGAGCTG
Clone-3   3601 TACAGCCTGTTCGAGCTGGAGAACGGCCGCAAGCGCATGCTGGCCAGCGCCGGCGAGCTG
WT-Cas9   3601 TACAGCCTGTTCGAGCTGGAGAACGGCCGCAAGCGCATGCTGGCCAGCGCCGGCGAGCTG
eSpCas9   3601 TACAGCCTGTTCGAGCTGGAGAACGGCCGCAAGCGCATGCTGGCCAGCGCCGGCGAGCTG
Cas9-HF1  3601 TACAGCCTGTTCGAGCTGGAGAACGGCCGCAAGCGCATGCTGGCCAGCGCCGGCGAGCTG
evo-Cas9  3601 TACAGCCTGTTCGAGCTGGAGAACGGCCGCAAGCGCATGCTGGCCAGCGCCGGCGAGCTG
Hypa-Cas9 3601 TACAGCCTGTTCGAGCTGGAGAACGGCCGCAAGCGCATGCTGGCCAGCGCCGGCGAGCTG
xCas9-3.7 3601 TACAGCCTGTTCGAGCTGGAGAACGGCCGCAAGCGCATGCTGGCCAGCGCCGGCGTGCTG

Clone-1   3661 CAGAAGGGCAACGAGCTGGCCCTGCCCAGCAAGTACGTGAACTTCCTGTACCTGGCCAGC
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Clone-3   3661 CAGAAGGGCAACGAGCTGGCCCTGCCCAGCAAGTACGTGAACTTCCTGTACCTGGCCAGC
WT-Cas9   3661 CAGAAGGGCAACGAGCTGGCCCTGCCCAGCAAGTACGTGAACTTCCTGTACCTGGCCAGC
eSpCas9   3661 CAGAAGGGCAACGAGCTGGCCCTGCCCAGCAAGTACGTGAACTTCCTGTACCTGGCCAGC
Cas9-HF1  3661 CAGAAGGGCAACGAGCTGGCCCTGCCCAGCAAGTACGTGAACTTCCTGTACCTGGCCAGC
evo-Cas9  3661 CAGAAGGGCAACGAGCTGGCCCTGCCCAGCAAGTACGTGAACTTCCTGTACCTGGCCAGC
Hypa-Cas9 3661 CAGAAGGGCAACGAGCTGGCCCTGCCCAGCAAGTACGTGAACTTCCTGTACCTGGCCAGC
xCas9-3.7 3661 CAGAAGGGCAACGAGCTGGCCCTGCCCAGCAAGTACGTGAACTTCCTGTACCTGGCCAGC

Clone-1   3721 CACTACGAGAAGCTGAAGGGCAGCCCCGAGGACAACGAGCAGAAGCAGCTGTTCGTGGAG
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Clone-3   3721 CACTACGAGAAGCTGAAGGGCAGCCCCGAGGACAACGAGCAGAAGCAGCTGTTCGTGGAG
WT-Cas9   3721 CACTACGAGAAGCTGAAGGGCAGCCCCGAGGACAACGAGCAGAAGCAGCTGTTCGTGGAG
eSpCas9   3721 CACTACGAGAAGCTGAAGGGCAGCCCCGAGGACAACGAGCAGAAGCAGCTGTTCGTGGAG
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evo-Cas9  3721 CACTACGAGAAGCTGAAGGGCAGCCCCGAGGACAACGAGCAGAAGCAGCTGTTCGTGGAG
Hypa-Cas9 3721 CACTACGAGAAGCTGAAGGGCAGCCCCGAGGACAACGAGCAGAAGCAGCTGTTCGTGGAG
xCas9-3.7 3721 CACTACGAGAAGCTGAAGGGCAGCCCCGAGGACAACGAGCAGAAGCAGCTGTTCGTGGAG

Clone-1   3781 CAGCACAAGCACTACCTGGACGAGATCATCGAGCAGATCAGCGAGTTCAGCAAGCGCGTG
Clone-2   3781 CAGCACAAGCACTACCTGGACGAGATCATCGAGCAGATCAGCGAGTTCAGCAAGCGCGTG
Clone-3   3781 CAGCACAAGCACTACCTGGACGAGATCATCGAGCAGATCAGCGAGTTCAGCAAGCGCGTG
WT-Cas9   3781 CAGCACAAGCACTACCTGGACGAGATCATCGAGCAGATCAGCGAGTTCAGCAAGCGCGTG
eSpCas9   3781 CAGCACAAGCACTACCTGGACGAGATCATCGAGCAGATCAGCGAGTTCAGCAAGCGCGTG
Cas9-HF1  3781 CAGCACAAGCACTACCTGGACGAGATCATCGAGCAGATCAGCGAGTTCAGCAAGCGCGTG
evo-Cas9  3781 CAGCACAAGCACTACCTGGACGAGATCATCGAGCAGATCAGCGAGTTCAGCAAGCGCGTG
Hypa-Cas9 3781 CAGCACAAGCACTACCTGGACGAGATCATCGAGCAGATCAGCGAGTTCAGCAAGCGCGTG
xCas9-3.7 3781 CAGCACAAGCACTACCTGGACGAGATCATCGAGCAGATCAGCGAGTTCAGCAAGCGCGTG

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Clone-3   3841 ATCCTGGCCGACGCCAACCTGGACAAGGTGCTGAGCGCCTACAACAAGCACCGCGACAAG
WT-Cas9   3841 ATCCTGGCCGACGCCAACCTGGACAAGGTGCTGAGCGCCTACAACAAGCACCGCGACAAG
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evo-Cas9  3841 ATCCTGGCCGACGCCAACCTGGACAAGGTGCTGAGCGCCTACAACAAGCACCGCGACAAG
Hypa-Cas9 3841 ATCCTGGCCGACGCCAACCTGGACAAGGTGCTGAGCGCCTACAACAAGCACCGCGACAAG
xCas9-3.7 3841 ATCCTGGCCGACGCCAACCTGGACAAGGTGCTGAGCGCCTACAACAAGCACCGCGACAAG

Clone-1   3901 CCCATCCGCGAGCAGGCCGAGAACATCATCCACCTGTTCACCCTGACCAACCTGGGCGCC
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Clone-3   3901 CCCATCCGCGAGCAGGCCGAGAACATCATCCACCTGTTCACCCTGACCAACCTGGGCGCC
WT-Cas9   3901 CCCATCCGCGAGCAGGCCGAGAACATCATCCACCTGTTCACCCTGACCAACCTGGGCGCC
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evo-Cas9  3901 CCCATCCGCGAGCAGGCCGAGAACATCATCCACCTGTTCACCCTGACCAACCTGGGCGCC
Hypa-Cas9 3901 CCCATCCGCGAGCAGGCCGAGAACATCATCCACCTGTTCACCCTGACCAACCTGGGCGCC
xCas9-3.7 3901 CCCATCCGCGAGCAGGCCGAGAACATCATCCACCTGTTCACCCTGACCAACCTGGGCGCC
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Clone-3   3961 CCCGCCGCCTTCAAGTACTTCGACACCACCATCGACCGCAAGCGCTACACCAGCACCAAG
WT-Cas9   3961 CCCGCCGCCTTCAAGTACTTCGACACCACCATCGACCGCAAGCGCTACACCAGCACCAAG
eSpCas9   3961 CCCGCCGCCTTCAAGTACTTCGACACCACCATCGACCGCAAGCGCTACACCAGCACCAAG
Cas9-HF1  3961 CCCGCCGCCTTCAAGTACTTCGACACCACCATCGACCGCAAGCGCTACACCAGCACCAAG
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Hypa-Cas9 3961 CCCGCCGCCTTCAAGTACTTCGACACCACCATCGACCGCAAGCGCTACACCAGCACCAAG
xCas9-3.7 3961 CCCGCCGCCTTCAAGTACTTCGACACCACCATCGACCGCAAGCGCTACACCAGCACCAAG

Clone-1   4021 GAGGTGCTGGACGCCACCCTGATCCACCAGAGCATCACCGGTCTGTACGAGACCCGCATC
Clone-2   4021 GAGGTGCTGGACGCCACCCTGATCCACCAGAGCATCACCGGTCTGTACGAGACCCGCATC
Clone-3   4021 GAGGTGCTGGACGCCACCCTGATCCACCAGAGCATCACCGGTCTGTACGAGACCCGCATC
WT-Cas9   4021 GAGGTGCTGGACGCCACCCTGATCCACCAGAGCATCACCGGTCTGTACGAGACCCGCATC
eSpCas9   4021 GAGGTGCTGGACGCCACCCTGATCCACCAGAGCATCACCGGTCTGTACGAGACCCGCATC
Cas9-HF1  4021 GAGGTGCTGGACGCCACCCTGATCCACCAGAGCATCACCGGTCTGTACGAGACCCGCATC
evo-Cas9  4021 GAGGTGCTGGACGCCACCCTGATCCACCAGAGCATCACCGGTCTGTACGAGACCCGCATC
Hypa-Cas9 4021 GAGGTGCTGGACGCCACCCTGATCCACCAGAGCATCACCGGTCTGTACGAGACCCGCATC
xCas9-3.7 4021 GAGGTGCTGGACGCCACCCTGATCCACCAGAGCATCACCGGTCTGTACGAGACCCGCATC

Clone-1   4081 GACCTGAGCCAGCTGGGCGGCGACGGCGGCTCCGGACCTCCAAAGAAAAAGAGAAAAGTA
Clone-2   4081 GACCTGAGCCAGCTGGGCGGCGACGGCGGCTCCGGACCTCCAAAGAAAAAGAGAAAAGTA
Clone-3   4081 GACCTGAGCCAGCTGGGCGGCGACGGCGGCTCCGGACCTCCAAAGAAAAAGAGAAAAGTA
WT-Cas9   4081 GACCTGAGCCAGCTGGGCGGCGACGGCGGCTCCGGACCTCCAAAGAAAAAGAGAAAAGTA
eSpCas9   4081 GACCTGAGCCAGCTGGGCGGCGACGGCGGCTCCGGACCTCCAAAGAAAAAGAGAAAAGTA
Cas9-HF1  4081 GACCTGAGCCAGCTGGGCGGCGACGGCGGCTCCGGACCTCCAAAGAAAAAGAGAAAAGTA
evo-Cas9  4081 GACCTGAGCCAGCTGGGCGGCGACGGCGGCTCCGGACCTCCAAAGAAAAAGAGAAAAGTA
Hypa-Cas9 4081 GACCTGAGCCAGCTGGGCGGCGACGGCGGCTCCGGACCTCCAAAGAAAAAGAGAAAAGTA
xCas9-3.7 4081 GACCTGAGCCAGCTGGGCGGCGACGGCGGCTCCGGACCTCCAAAGAAAAAGAGAAAAGTA

Clone-1   4141 TACCCCTACGACGTGCCCGACTACGCC
Clone-2   4141 TACCCCTACGACGTGCCCGACTACGCC
Clone-3   4141 TACCCCTACGACGTGCCCGACTACGCC
WT-Cas9   4141 TACCCCTACGACGTGCCCGACTACGCC
eSpCas9   4141 TACCCCTACGACGTGCCCGACTACGCC
Cas9-HF1  4141 TACCCCTACGACGTGCCCGACTACGCC
evo-Cas9  4141 TACCCCTACGACGTGCCCGACTACGCC
Hypa-Cas9 4141 TACCCCTACGACGTGCCCGACTACGCC
xCas9-3.7 4141 TACCCCTACGACGTGCCCGACTACGCC
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