Cas9 Stable Cell Lines

CRISPR/Cas9 (clustered regularly interspaced short palindromic repeats/CRISPR associated protein 9) is adapted from a naturally occurring bacterial immune system which can protect bacteria from damage caused by phage infection. As a genome editing tool, it is faster, cheaper and more accurate than previous techniques such as ZFNs and TALENs.

CREATIVE
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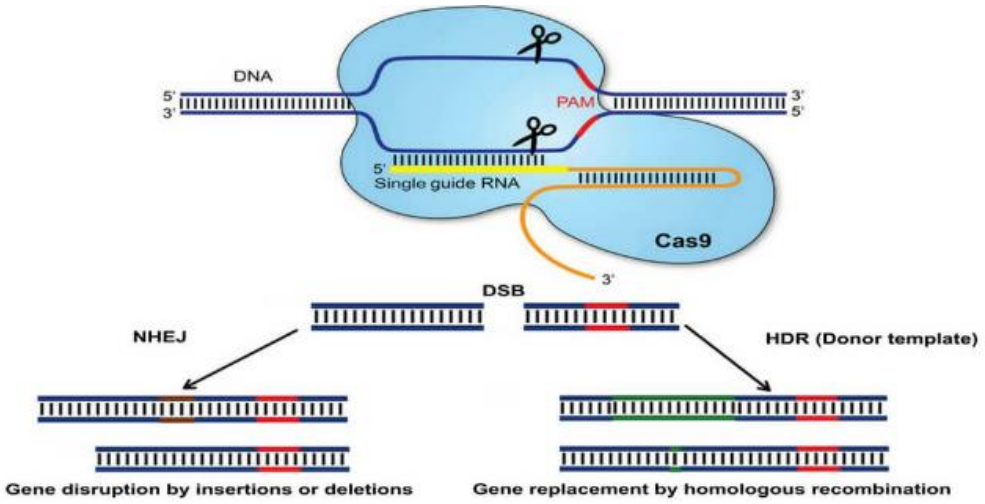
The CRISPR/Cas9 system is composed of two components: Cas9 nuclease and single guide RNA (sgRNA). By delivering the Cas9 nuclease complexed with sgRNA into a cell, Cas9 is directed by sgRNA, which recognizes homologous DNA sequence, and induces a double strand break (DSB). In the presence of donor template, the DSB can be repaired by HDR (homology-directed repair) pathway enabling precise editing such as point mutation. When DNA repair template is not provided, the cell is forced to undergo NHEJ (non-homologous end joining) pathway resulting in indels (insertions or deletions).

Apart from wild-type Cas9, a few variants have been developed, with improved specificity or reduced off-target effects. For example, SpCas9-HF1 is a high-fidelity variant designed to reduce non-specific DNA contacts.



Creative Biogene has developed a series of Cas9 expressing stable cell lines. We have achieved Cas9 stable expression in several types of cancer cells which enable scientists to study gene functions in certain types of cancer. The gene coding Cas9 nuclease can also be stably integrated into specific host cell genome according to customers' experimental requirements. The activity of Cas9 in each constructed stable cell line has been functionally validated by T7 Endonuclease I.

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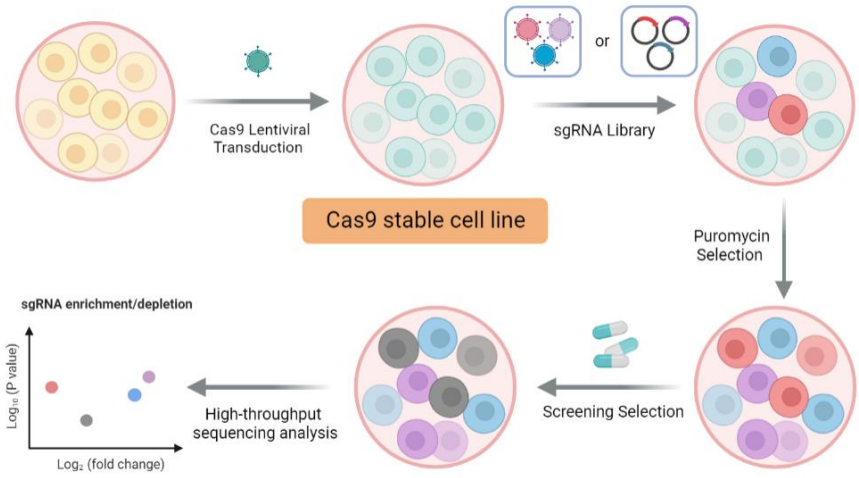
Quality Control

1. Q-PCR, WB, T7 Endonuclease I assay
2. No mycoplasma contamination
3. Bacterial and fungal test

Applications

1. Ideal cell models for downstream genome editing experiments including gene knock-out, gene knock-in, gene tagging, etc.
2. High-throughput sgRNA screening.
3. Study gene functions in multiple cancer cells.
4. Validation of protein target of certain drug candidate.
5. Identification of drug candidates for protein of interest.



Our Advantages

1. Robust cell line development platforms & Excellent scientific teams
2. Flexible construction strategies: Lipofectamine™ transfection, Electroporation, Lentivirus transduction
3. Strict quality control
4. Stable Cas9 integration minimizes the need for co-transfection or co-transduction of sgRNAs, ideal for high-throughput sgRNA applications.
5. Flexibility in cell types including liver cancer cells, breast cancer cells, colon cancer cells, lung cancer cells, pancreatic cancer cells, gastric cancer cells, embryonic kidney cells, etc.
6. Functional validation of Cas9 by T7 Endonuclease I assay

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CSC-RO0152 Cas9 Stable Cell Line-HEK293

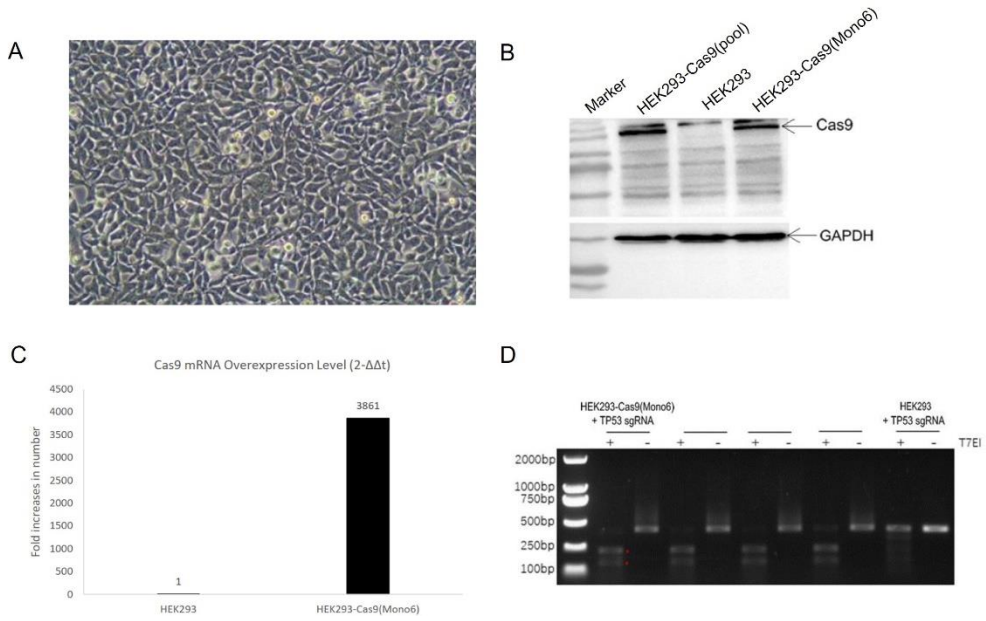

Figure 1. A: Cell morphology before cryopreservation. B: Western blot analysis of Cas9 overexpression using anti-FLAG antibody. C: Real Time qPCR analysis of Cas9 overexpression. D: The mutations were recognized and cut by T7 Endonuclease I, resulting in shorter DNA fragments (marked with red asterisks).

CSC-RO0186 Cas9 Stable Cell Line-C2C12

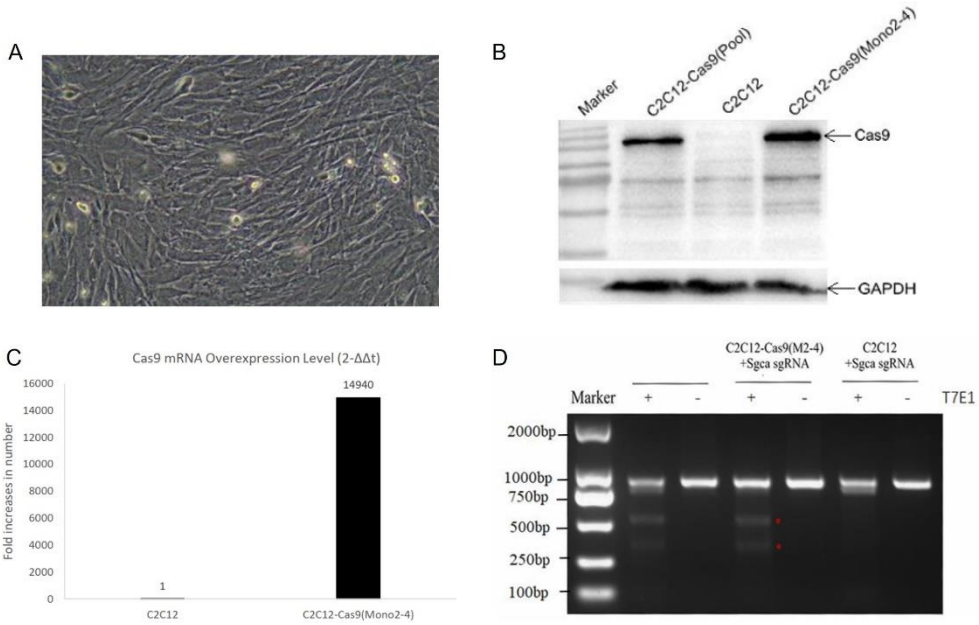

Figure 2. A: Cell morphology before cryopreservation. B: Western blot analysis of Cas9 overexpression using anti-FLAG antibody. C: Real Time qPCR analysis of Cas9 overexpression. D: The mutations were recognized and cut by T7 Endonuclease I, resulting in shorter DNA fragments (marked with red asterisks).

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CSC-RO0028 Cas9 Stable Cell Line-MCF7

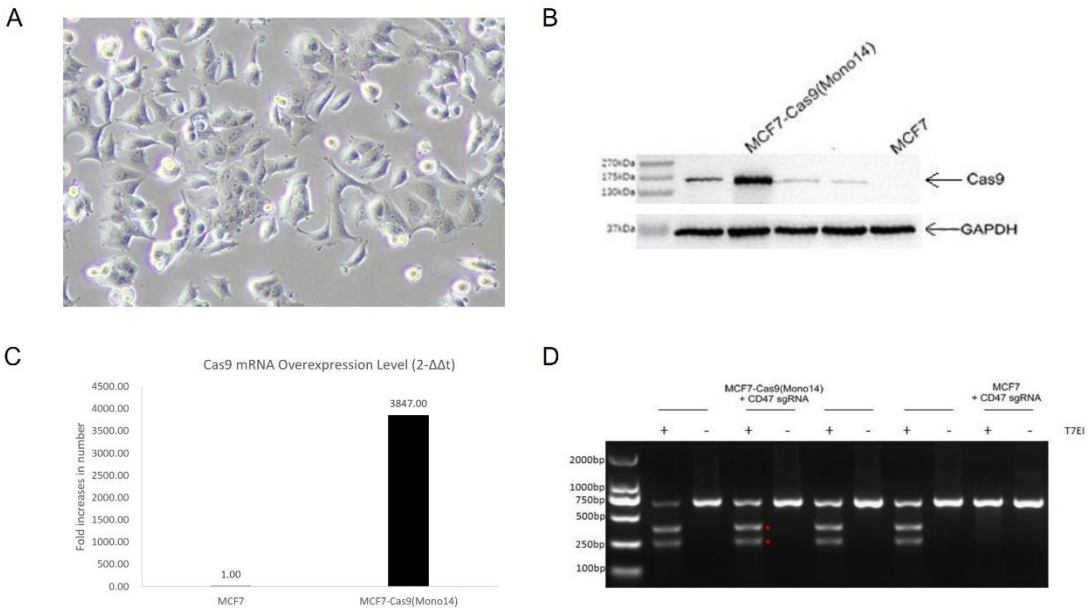

Figure 3. A: Cell morphology before cryopreservation. B: Western blot analysis of Cas9 overexpression using anti-FLAG antibody. C: Real Time qPCR analysis of Cas9 overexpression. D: The mutations were recognized and cut by T7 Endonuclease I, resulting in shorter DNA fragments (marked with red asterisks).

CSC-RO0177 Cas9 Stable Cell Line-U2OS

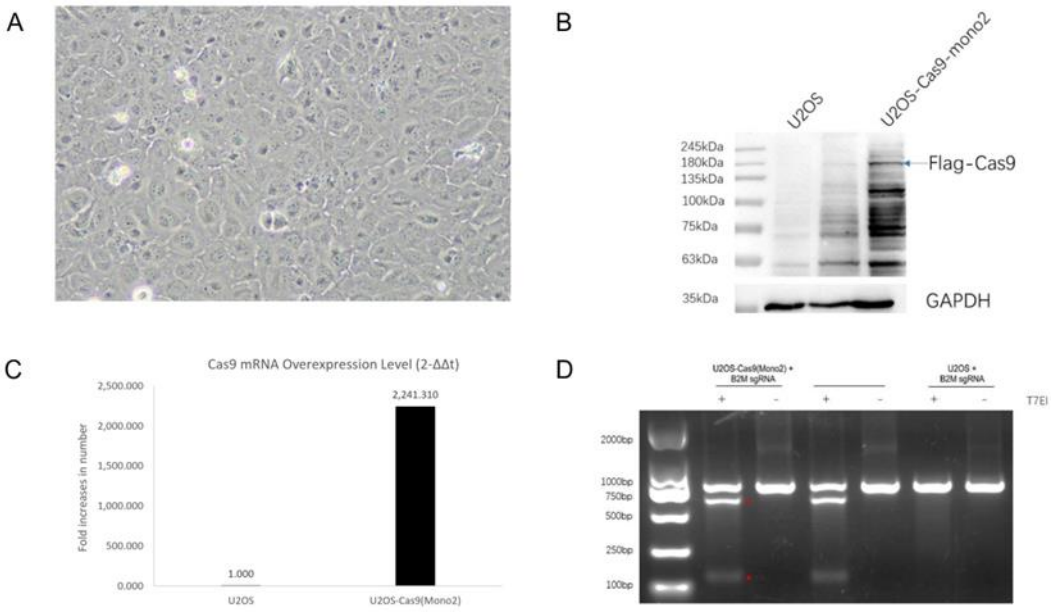

Figure 4. A: Cell morphology before cryopreservation. B: Western blot analysis of Cas9 overexpression using anti-FLAG antibody. C: Real Time qPCR analysis of Cas9 overexpression. D: The mutations were recognized and cut by T7 Endonuclease I, resulting in shorter DNA fragments (marked with red asterisks).

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Product List

Cat. No.	Product Name	Cat. No.	Product Name
CSC-RO0024	Cas9 Stable Cell Line-H1299	CSC-RO0026	Cas9 Stable Cell Line-HeLa
CSC-RO0025	Cas9 Stable Cell Line-HEK293T	CSC-RO0027	Cas9 Stable Cell Line-A549
CSC-RO0028	Cas9 Stable Cell Line-MCF-7	CSC-RO0172	Cas9 Stable Cell Line-RKO
CSC-RO0029	Cas9 Stable Cell Line-MDA-MB-231	CSC-RO0173	Cas9 Stable Cell Line-T84
CSC-RO0030	Cas9 Stable Cell Line-HepG2	CSC-RO0174	Cas9 Stable Cell Line-COLO 205
CSC-RO0031	Cas9 Stable Cell Line-AGS	CSC-RO0175	Cas9 Stable Cell Line-SNU-C1
CSC-RO0032	Cas9 Stable Cell Line-BXPC-3	CSC-RO0176	Cas9 Stable Cell Line-LS411N
CSC-RO0033	Cas9 Stable Cell Line-Neuro2a	CSC-RO0177	Cas9 Stable Cell Line-U2OS
CSC-RO0036	Cas9 Stable Cell Line-SNU-475	CSC-RO0178	Cas9 Stable Cell Line-K562
CSC-RO0037	Cas9 Stable Cell Line-HT-29	CSC-RO0179	Cas9 Stable Cell Line-Jurkat
CSC-RO0038	Cas9 Stable Cell Line-LoVo	CSC-RO0180	Cas9 Stable Cell Line-DU145
CSC-RO0039	Cas9 Stable Cell Line-KATO111	CSC-RO0181	Cas9 Stable Cell Line-SH-SY5Y
CSC-RO0074	Cas9 Stable Cell Line-H9 hESC	CSC-RO0182	Cas9 Stable Cell Line-T24
CSC-RO0152	Cas9 Stable Cell Line-HEK293	CSC-RO0183	Cas9 Stable Cell Line-HK2
CSC-RO0153	Cas9 Stable Cell Line-NCI-H1975	CSC-RO0184	SpCas9-HF1 Stable Cell Line-HEK293T
CSC-RO0154	Cas9 Stable Cell Line-NCI-H1437	CSC-RO0186	Cas9 Stable Cell Line-C2C12
CSC-RO0155	Cas9 Stable Cell Line-NCI-H661	CSC-RO0187	Cas9 Stable Cell Line-BA/F3
CSC-RO0156	Cas9 Stable Cell Line-MDA-MB-468	CSC-RO0188	SpCas9-HF1 Stable Cell Line-Neuro2a
CSC-RO0157	Cas9 Stable Cell Line-T47D	CSC-RO0189	Cas9 Stable Cell Line-C6
CSC-RO0158	Cas9 Stable Cell Line-SK-BR-3	CSC-RO0216	Cas9 Stable Cell Line-HCC827
CSC-RO0159	Cas9 Stable Cell Line-HCC70	CSC-RO0217	Cas9 Stable Cell Line-HCC38
CSC-RO0160	Cas9 Stable Cell Line-DU4475	CSC-RO0218	Cas9 Stable Cell Line-AU-565

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Product List

Cat. No.	Product Name
CSC-RO0161	Cas9 Stable Cell Line-HCC1428
CSC-RO0162	Cas9 Stable Cell Line-SNU-449
CSC-RO0163	Cas9 Stable Cell Line-PLC/PRF/5
CSC-RO0164	Cas9 Stable Cell Line-SNU-387
CSC-RO0165	Cas9 Stable Cell Line-SNU-423
CSC-RO0166	Cas9 Stable Cell Line-C3A
CSC-RO0167	Cas9 Stable Cell Line-SK-HEP-1
CSC-RO0168	Cas9 Stable Cell Line-SNU-1
CSC-RO0169	Cas9 Stable Cell Line-SNU-16
CSC-RO0170	Cas9 Stable Cell Line-HPAF-II
CSC-RO0171	Cas9 Stable Cell Line-CFPAC-1
CSC-RO0219	Cas9 Stable Cell Line-HCC1500
CSC-RO0220	Cas9 Stable Cell Line-NCI-N87
CSC-RO0221	Cas9 Stable Cell Line-Panc 10.05
CSC-RO0222	Cas9 Stable Cell Line-HCT116
CSC-RO0223	Cas9 Stable Cell Line-786-O
CSC-RO0224	Cas9 Stable Cell Line-1321N1
CSC-RO0225	Cas9 Stable Cell Line-HT1080
CSC-RO0226	Cas9 Stable Cell Line-NIH-3T3
CSC-RO0668	dCas9-BFP-KRAB Stable Cell Line-HEK293
CSC-RO0669	dCas9-BFP-KRAB Stable Cell Line-HeLa

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