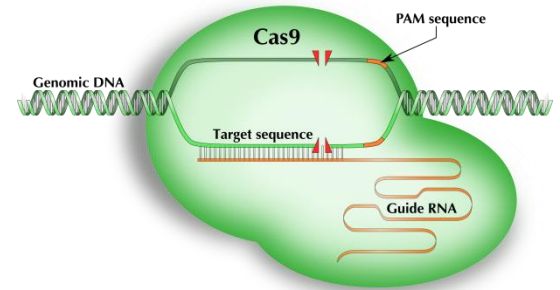# Genome Editing with CRISPR/Cas9

CRISPR/Cas9 is the cutting-edge RNA-guided genome editing tool, which is *versatile, simple and affordable*. Cas9 in complex with the guide RNA will lead to double-stranded break in a sequence-specific manner. Genome editing can be achieved via repair mechanism.


| CRISPR/Cas9 Products *New* |
| --- |
| **KN2.0 Gene knockout kits:**
 ~50% bi-allelic knockout efficiency |
| **CRISPR/Cas9 vectors** (All-in-one, Lenti, Cas9) |
| **Cas9 antibodies / Cas9 enzymes** |
| **AAVS1 / ROSA26 transgene insertion**
 Expression in genomic safe location |

Custom Services
gRNA cloning service into CRISPR vectors $175, sequenced and ready to use
Donor vector of your own design

Applications using CRISPR/Cas9 as a genome editing tool
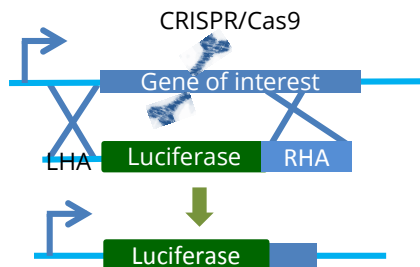
1. Indels (no donor template DNA)
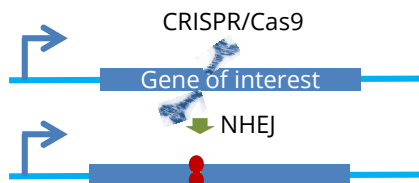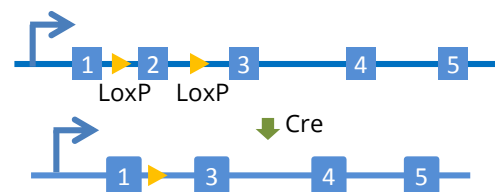

2. Gene knock-out with a reporter(s) knock-in
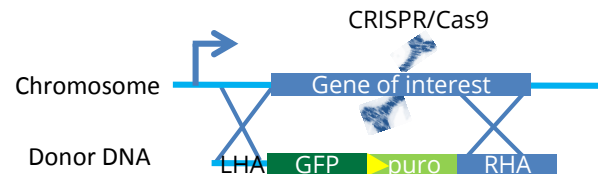
3. Native Promoter Study
Luciferase under the endogenous promoter

4. Conditional knockout
For essential genes or tissue-specific study
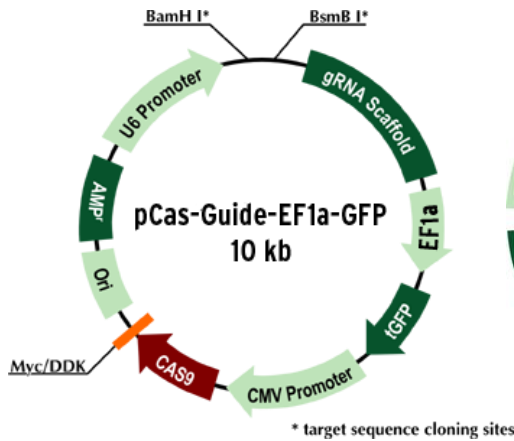inserting LoxP sites around the exon(s) to be knocked-out
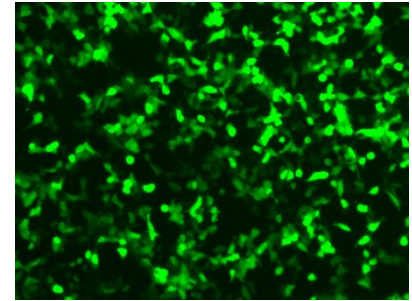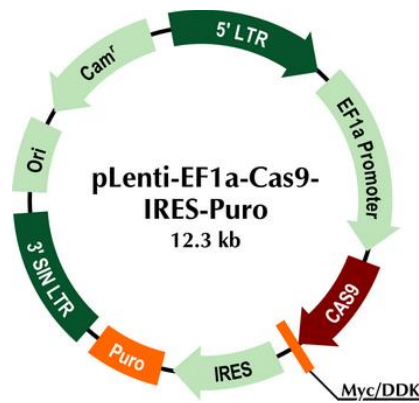

5. Specific mutations (with donor template DNA)
- SNPs—SNP associated disease, gene correction
- Desired deletions/insertions
- Tagging the endogenous genes

ORIGENE
www.origene.com

Genome Editing with CRISPR/Cas9

CRISPR/Cas9 All-in-one vectors

BamH I*   BsmB I*

pCas-Guide-EF1a-GFP
10 kb

U6 Promoter · gRNA Scaffold · EF1a · Amp' · Ori · tGFP · Myc/DDK · CAS9 · CMV Promoter

* target sequence cloning sites

Cas9 Lenti Vector

pLenti-EF1a-Cas9-IRES-Puro
12.3 kb

5' LTR · Cam' · Ori · 3' SIN LTR · Puro · EF1a Promoter · CAS9 · IRES · Myc/DDK
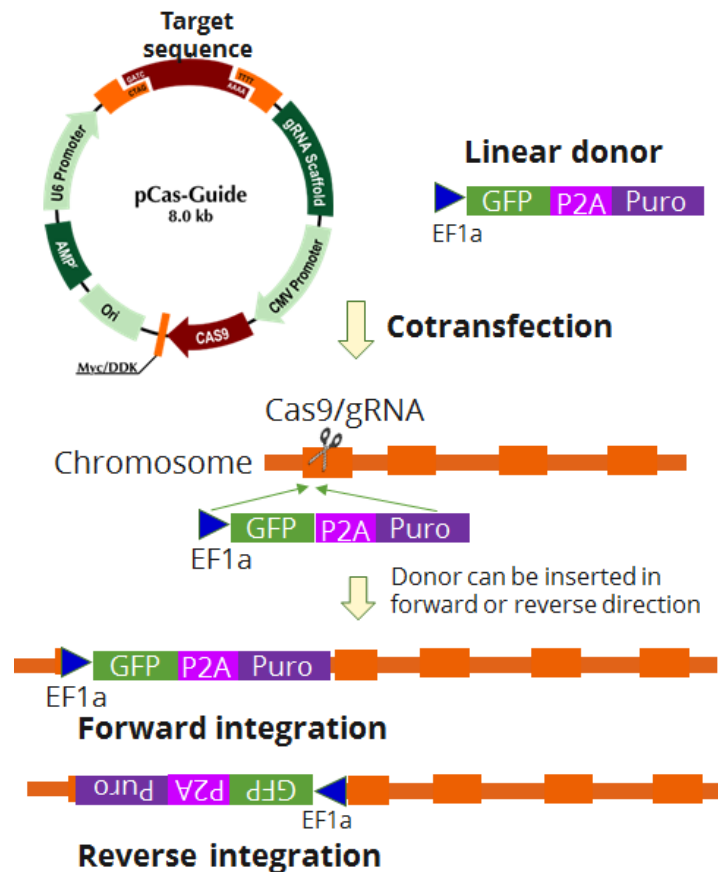

pCas-Guide-EF1a-GFP was transfected into HEK293 cells. The fluorescent picture shows the expression of GFP.

More CRISPR vectors: https://www.origene.com/products/vectors/crispr-vectors

Scheme of Genome-editing knockout: KN2.0

Target sequence

pCas-Guide
8.0 kb

U6 Promoter · gRNA Scaffold · Amp' · Ori · CAS9 · CMV Promoter · Myc/DDK

Linear donor

EF1a | GFP | P2A | Puro

Cotransfection

Cas9/gRNA

Chromosome

EF1a | GFP | P2A | Puro

Donor can be inserted in forward or reverse direction

EF1a | GFP | P2A | Puro
Forward integration

EF1a | GFP | P2A | Puro
Reverse integration

CRISPR Video YouTube

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