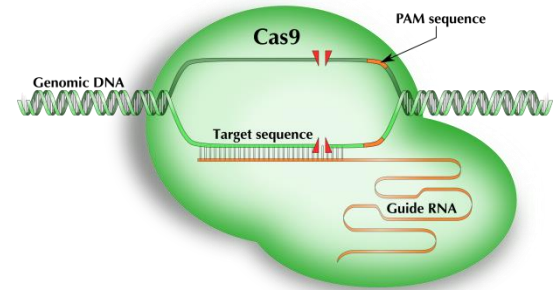# Genome Editing with CRISPR/Cas9

CRISPR/Cas9 is a RNA-guided, targeted genome editing tool which is *versatile*, *simple, and affordable*. Cas9 in complex with the guide RNA will lead to double-stranded breaks in a sequence-specific manner. Genome editing can be achieved via homology based and non-homology based repair mechanisms.
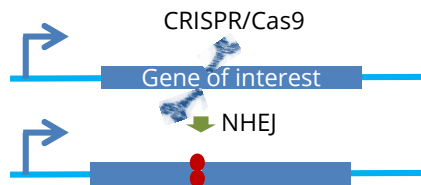

CRISPR/Cas9 Products

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

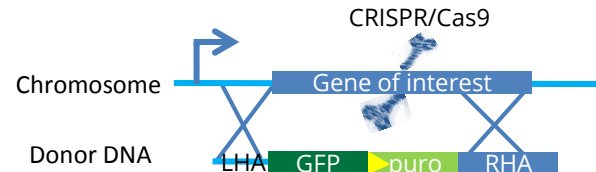**CRISPRa / CRISPRi kits**

Functional Cas9 Protein

Custom Services

gRNA cloning service into CRISPR vectors

Donor vector of your own design

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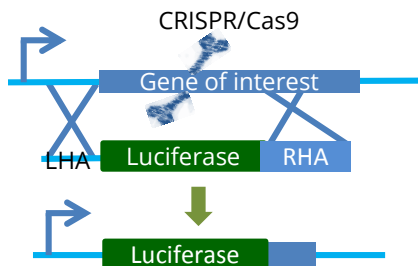
1. Indels (no donor template DNA)

3. Native Promoter Study
Luciferase under the endogenous promoter

2. Gene knock-out with a reporter(s) knock-in

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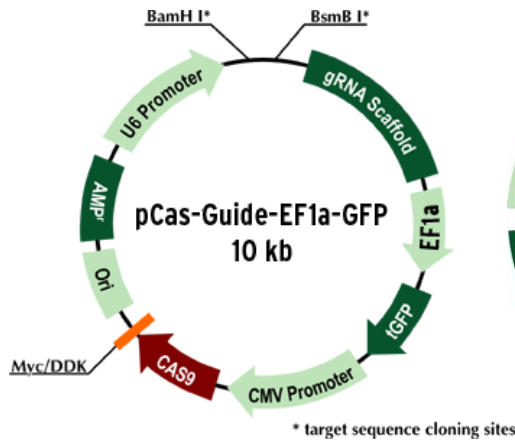inserting LoxP sites around the exon(s) to be knocked-out
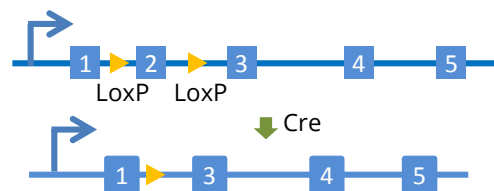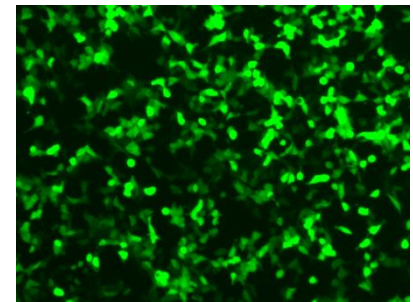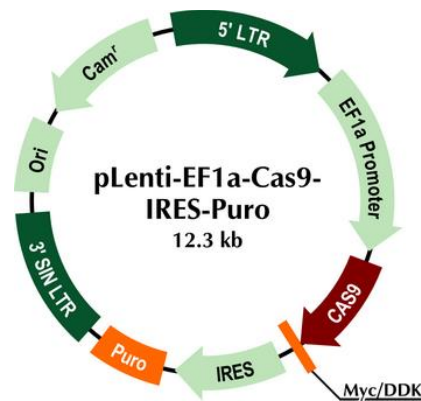

5. Specific mutations (with donor template DNA)
- SNPs—SNP associated disease, gene correction
- Desired deletions/insertions
- Tagging the endogenous genes

ORiGENE
www.origene.com

Genome Editing with CRISPR/Cas9

CRISPR/Cas9 All-in-one vectors

pCas-Guide-EF1a-GFP 10 kb

* target sequence cloning sites

Cas9 Lenti Vector

pLenti-EF1a-Cas9-IRES-Puro 12.3 kb
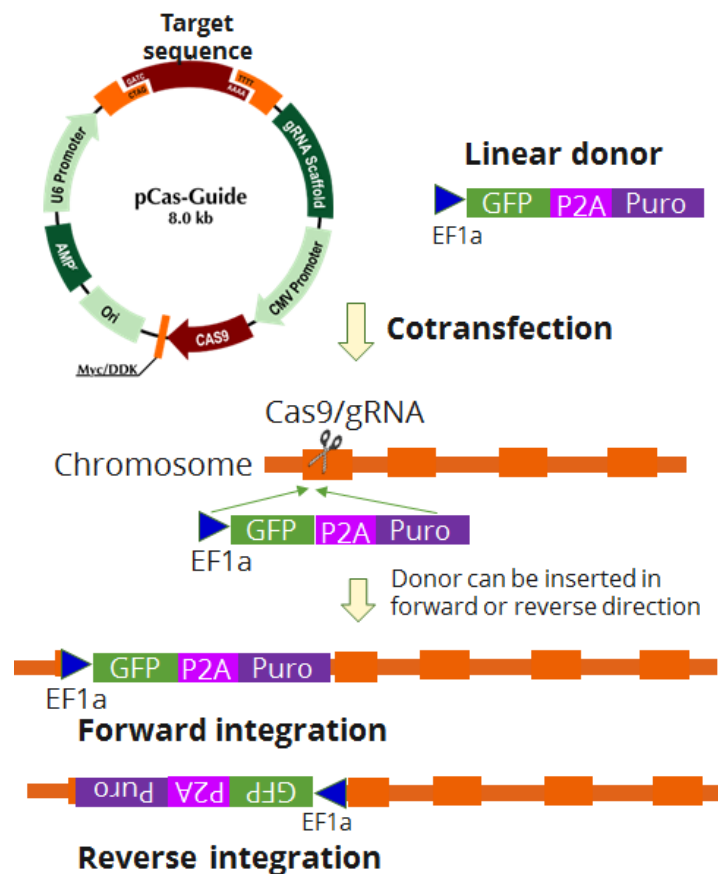

pCas-Guide-EF1a-GFP was transfected into HEK293 cells. The fluorescent picture shows the expression of GFP.

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

Scheme of Genome-editing knockout: KN2.0

pCas-Guide 8.0 kb

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

Reverse integration

CRISPR Video YouTube

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www.origene.com