

# Gene Overexpression & Knockdown Cell Line Service



Expert Tailored, High efficiency, Long-Term Stability, Fully Validated

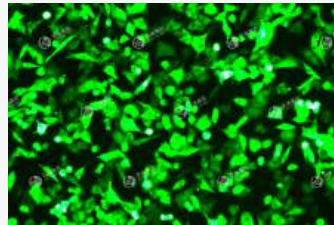
EDITGENE provides expert gene overexpression and gene knockdown stable cell line construction services, enabling researchers to study gene function, screen drug targets, and analyze signaling pathways. Our experienced team delivers high-expression, highly stable cell line models to support reliable research outcomes.

## Overexpression Stable Cell Line

- **Technical Principle:** Introducing the coding sequence (CDS) of the gene of interest (GOI) or a CRISPRa activation system into cells to achieve overexpression of the GOI, enabling Gain-of-Function studies.
- **Service Types:** ORF Stable Cell Line Construction/ CRISPRa Stable Cell Line Construction
- **Case Study:** Lentiviral-Mediated Overexpression of copGFP in A375 Cells



A375-copGFP cells (Bright-field)



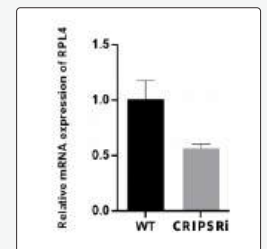
A375-copGFP cells (Fluorescence)



Scan to get your solution

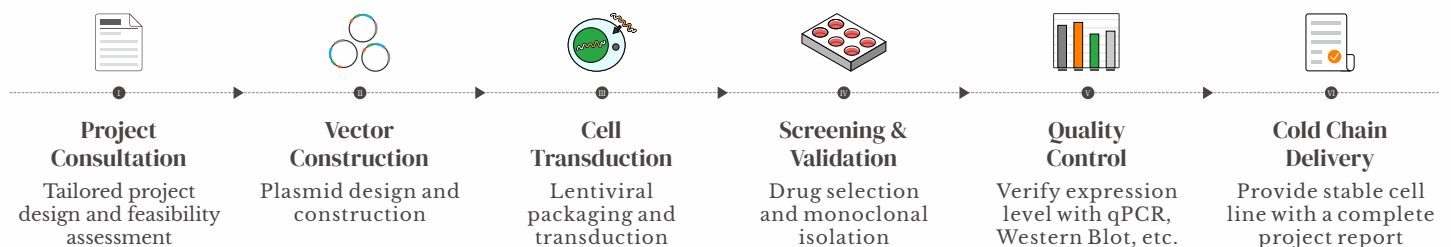
## Gene Knockdown Stable Cell Line

- **Technical Principle :**  
Suppress the expression level of endogenous gene via RNA interference or CRISPRi technology to enable Loss-of-Function studies.
- **Service Type :**  
ShRNA Stable Cell Line Construction/CRISPRi Stable Cell Line Construction
- **Case Study :**  
CRISPRi-Mediated Transcriptional Repression of the RPL4 Gene >>>



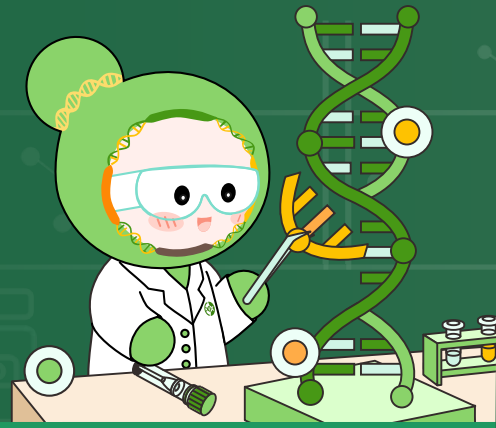
qRT-PCR validation for RPL4

## Technical Roadmap



# Knock-In Cell Line Construction Service

Precise gene editing to advance research and drug development



Deliver homozygous single-clone stable knock-in cell lines


## Technical Principle


CRISPR/Cas9-based gene knock-in technology enables site-specific integration of exogenous DNA sequences for precise control of expression and also supports in-frame tagging of endogenous proteins for analysis.


However, conventional knock-in approaches often suffer from low delivery efficiency, high cytotoxicity, and limited HDR efficiency. EDITGENE's proprietary FLASH-KI platform overcomes these challenges, enabling efficient and low-toxicity knock-in across diverse cell types.



Scan to get your solution

- 

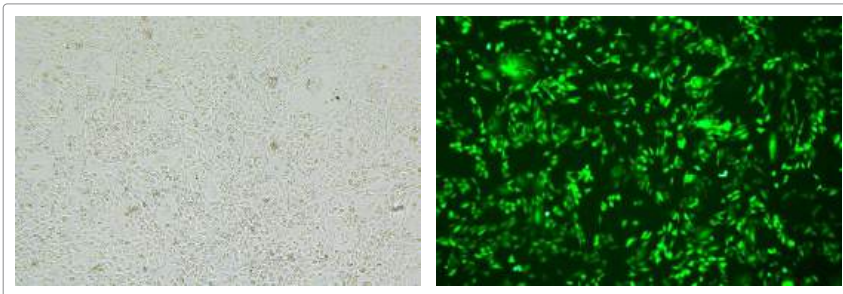
**Safe Delivery**  
Avoids electroporation and liposome-based delivery. Significantly reduces cytotoxicity.
- 

**Enhanced efficiency**  
Breaks cell cycle restriction. Promotes precise HDR.
- 

**Rapid edit**  
Editing completes within 24 hr. KI efficiency peaks at days 7.

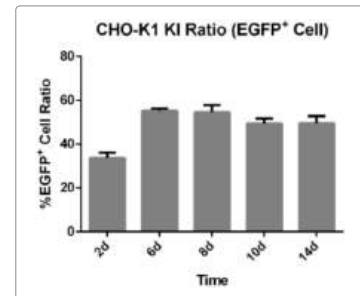
## Case Study

Tagging GFP at C terminus of GAPDH in CHO-K1 with HES-KI.  
In CHO-K1 polyclonal cells, the knock-in efficiency of EGFP reached 55%.



CHO-K1 EGFP-KI polyclonal (Bright-field)

CHO-K1 EGFP-KI cells (Fluorescence)



GFP exhibited stable expression for 14 days

## Application

### Site-specific Knock-in

- Disease modeling (PM, SNP)
- CAR-T and CAR-NK cell engineering
- Therapeutic gene knock-in in iPSCs

### In-frame Tagging

- Endogenous protein labeling (GFP / HiBiT)
- Target validation models (dTAG / HiBiT)
- Reporter cell lines for high-throughput screening



Follow on LinkedIn



Visit our website