

# Product Overview

## The Evolving Product Lines

cDNA Clones  
Lenti Vectors and Particles  
Proteins  
Antibodies  
CRISPR/Cas9/sgRNAs  
RNAi

 **ORIGENE**  
[www.origene.com](http://www.origene.com)

# Comprehensive Collection of cDNA Clones

Choose from 100,000 ready-to-ship cDNA for a quick and cost-saving solution

- Broad coverage: human, mouse, rat and virus
- Expression clones driven by CMV promoter
- 10 µg transfection-ready plasmids
- Lenti vector/particles available

Start here with other vendors or...

Start here with OriGene



**Other Providers:**  
Clones arrive as bacterial stock

**OriGene:**  
Clones arrive as purified plasmid DNA

OriGene cDNA clone offerings

TrueClone

TrueORF

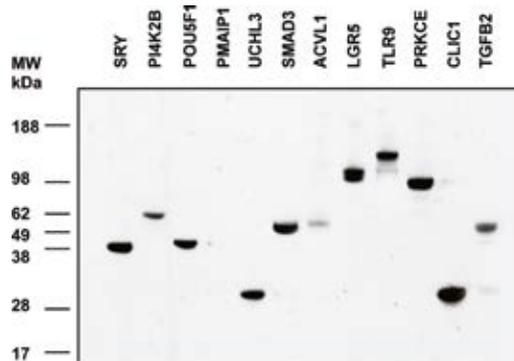


- Native protein expressed; No tags
- Cost-effective and time-saving
- Pathway-specific clone sets available

- Two tags readily available: Myc-DDK or GFP
- 20,000 TrueORF Gold: expression validated by WB
- Flexibility: easily shuttled to 80 destination vectors



- TrueORF clones with Myc-DDK tag
- Cited in > 1,000 publications



Myc-DDK tagged ORF clones were transfected into HEK293 cells; WB was performed with anti-DDK Ab

**TrueORF<sup>Gold</sup>**

- ✓ Expression Validated
- ✓ Sequence Verified
- ✓ Next-Day Shipment

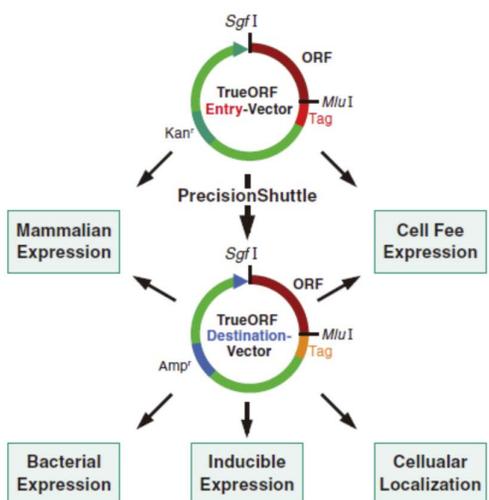


Scan to watch our video on cDNA clones

# Convenient Choices of TrueORF Vectors

Easy Shuttling: The ORF insert can be shuttled to > 80 destination vectors

Vector	Vector SKU	Vector Map	Fusion Tag	Ideal Application	ORF Clone SKUs	Examples
pCMV6-Entry	PS100001		C-terminal Myc-DDK	Detection and purification of over-expressed protein	RC2XXXXX	 Myc-DDK tagged ORF clone can be applied to study protein expression in various applications
pCMV6-AC-GFP	PS100010		C-terminal tGFP	Tracking the over-expressed protein in transfected cells	RG2XXXXX	 GFP tagged ORF clone can be used to track fusion protein cellular localization



Epitope tagging	FP tagging	Selection markers	Lentiviral	Bacterial expression
Myc-DDK	GFP	Puromycin	Myc-DDK	His
HA	RFP	Neomycin	GFP	GST
His	YFP	Blasticidin	RFP	
3xDDK	CFP	Hygromycin	YFP	
FC	mBFP			
	mKate			

All TrueORF inserts housed in a pCMV6-Entry vector can be easily shuttled via PrecisionShuttle, a simple 'cut-and-paste' procedure, into any of the destination vectors (via two rare-cutting restriction endonucleases, Sgf I and Mlu I).

## Lentiviral System for Effective DNA Delivery

Vector Name	pLenti-C-Myc-DDK	pLenti-C-mGFP
Vector SKU	PS100064	PS100071
Fusion Tag	C-terminal Myc-DDK	C-terminal mGFP
Ideal For	In hard-to-transfect cells: Detection and purification of expressed protein	Tracking the over-expressed protein in transfected cells

- 3rd Generation Lentiviral System
- Ideal for delivering DNA into hard-to-transfect cells and animal models
- Genome-wide coverage of human/mouse/rat ORF clones
- C-terminal Myc-DDK or mGFP tag

### Lenti Packaging Kit

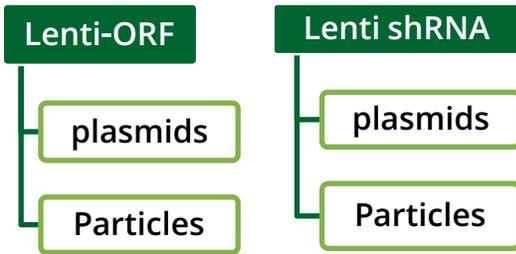
Lenti-vPAK (Cat# TR30037)

for generating lentivirus

Transfection reagent included!



# Lentiviral System: Lenti-ORF & Lenti-shRNA

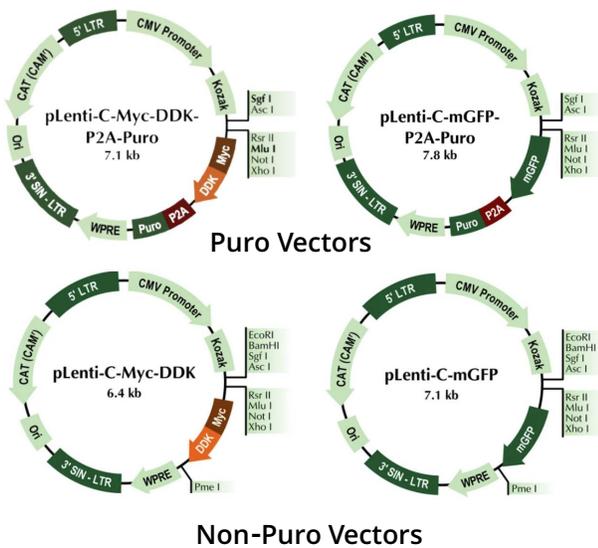


- **High efficiency:** Up to 100% transduction
- **Broad spectrum:** Dividing & non-dividing
- **Biosafety:** 3rd generation, safest
- **Coverage:** Genome wide offering

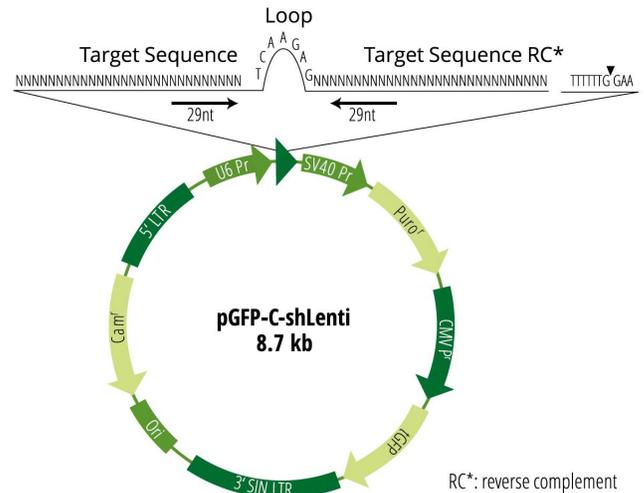


Accessories: **Packaging kit** **Control particles** **LentiTiter Kit**

## Lenti-ORF clones, 4 vector options



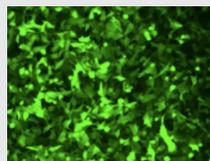
## Lenti shRNAs



More lentiviral destination vectors:  
<https://www.origene.com/products/vectors/orf-cloning-vectors>

## Highly effective Lenti-packaging kit Cat# TR30037

- Optimized for high efficiency
- Package 3<sup>rd</sup> generation vectors
- Transfection reagent included



HEK293 cells transduced with lenti GFP virus

## One-Wash™ Lenti Titer kit Cat# TR30038

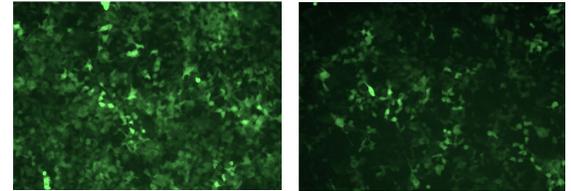
- Simplified workflow, 1 wash instead of 4
- One temperature incubation, no 37°C
- Shortened sample binding time, 2 hr vs O/N

# RNA Interference with Guaranteed Knockdown

## HuSH-29 shRNA

### Comprehensive coverage of human, mouse & rat genes

- 29mer shRNA: higher potency, minimal interferon response
- Multiple vector selection: lentiviral or retroviral
- Guaranteed knockdown ( $\geq 70\%$ )
- Lenti particles available
- Each kit contains 4 shRNAs + 1 scrambled control



tGFP Knockdown using Lenti-shRNA

We recommend the highly effective Lenti-vPAK (Cat# TR30037) for Lenti-shRNA packaging.

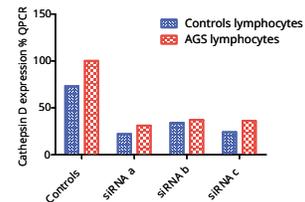
## Trilencer-27 siRNA

### For human, mouse and rat

- 27mer Dicer-substrate duplex—higher potency & minimal interferon response
- Guaranteed gene knockdown ( $\geq 70\%$ )
- Cost effective
- Each kit contains 3 gene-specific siRNAs + 1 negative control

## siRNA Transfection Reagent: siTRAN 1.0

- Dual purpose reagent – transfect both siRNA duplex and cDNA
- High transfection efficiency and low cytotoxicity
- Proven effective in multiple cell lines and primary cells



OriGene siRNAs achieved more than 70% knockdown of the expression of cathepsin D in AGS lymphocytes. Data retrieved from Pulliero *et al.*, 2013.

## microRNA Tools

### From miRNA detection, quantification to target identification

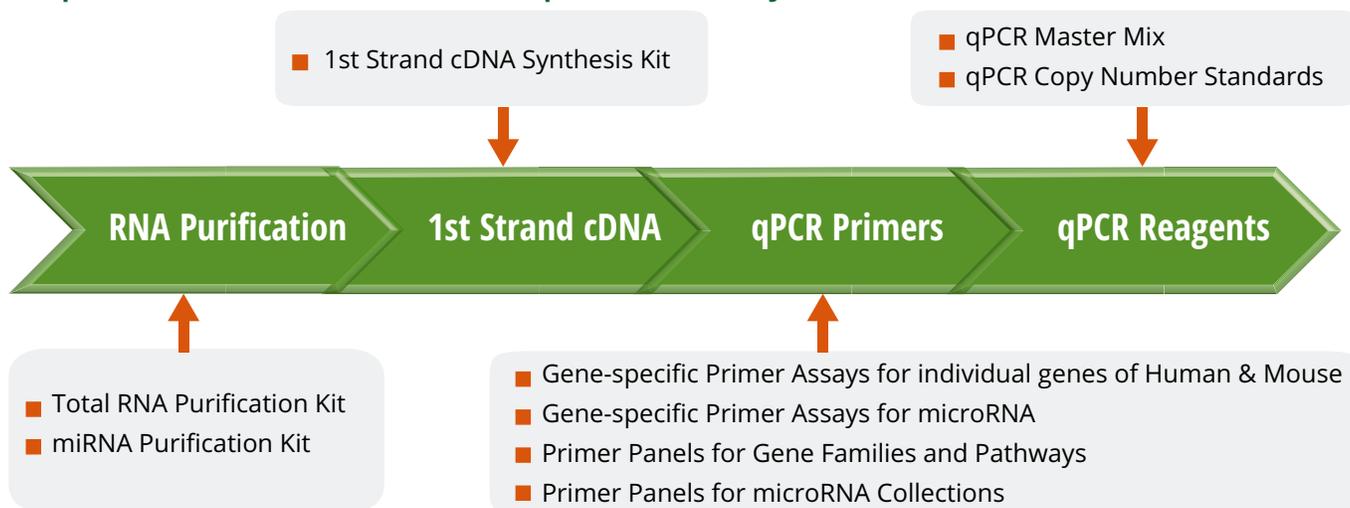
Global miRNA profiling	qPCR Master Mix	miRNA expression perturbation	miRNA expression plasmids
	qPCR Primer Panels		Transfection reagents
miRNA detection & quantification	miRNA primer pairs	miRNA target identification	3' UTR reporter clones
	miRNA copy number standards		Expression cDNA clones

Scan to watch our video on shRNA



# Real-time PCR & Lab Essentials

## Comprehensive Tools for Gene Expression Analysis



## Molecular Tools for Your Day-to-Day Needs

### Transfection Reagents, Tailored for Your Unique Needs



<b>TurboFectin 8.0™</b> Lipid/histone based transfection	<b>Viromer®</b> Virus-like polymer
■ Wide spectrum: over 100 cell lines or primary cells tested	■ Formulated for hard-to-transfect cells
<b>Transfection Reagents</b>	
<b>MegaTran 1.0</b> Polymer based transfection	<b>siTran 1.0</b> For transfection of siRNA duplex
■ Cost effective compared to other commonly used transfection reagents	■ Successfully applied to many cell lines such as T-cell, lymphocytes and cancer cells

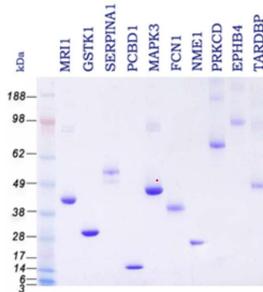
## PowerPrep® Plasmid Purification Kits

- High Yield... Low Endotoxins... No Syringes...
- Low cost shipping option, cheaper and solution-free!



## Better Proteins, Better Assays

Powered by our extensive collection of TrueORF human cDNA clones, OriGene offers full-length purified human proteins expressed in human cells. C-terminal Myc-DDK tagged human ORF clones are transfected into HEK293T cells. The total crude cell lysates are over-expression lysates with the specific gene over-expressed. Recombinant human proteins are obtained with anti-DDK antibody by affinity purification under native conditions.



## Features

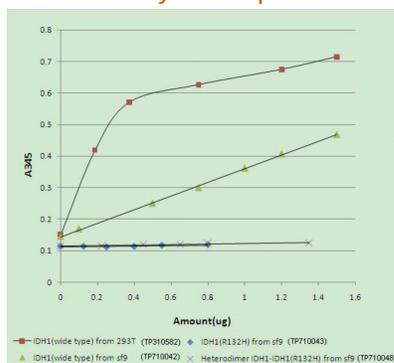
- Expressed in HEK293 cells
- Myc-DDK (FLAG®) tagged
- Optimal preservation of protein structure and post-translational modification

## Benefits of Mammalian Expressed Proteins

	Mammalian	Yeast	Insect Cells	E. coli
Protein folding and purification	Optimal	Poor	Low	Poor
Post-translational processing	Yes	Low	Low	No
Authenticity & Bioactivity	Native & Active	Poor	Poor	Very Poor
Time & Efforts required	Time-consuming & Expensive	Low cost	High yield	Low cost & High yield

## Bioactivity of Purified Proteins in Functional Assays

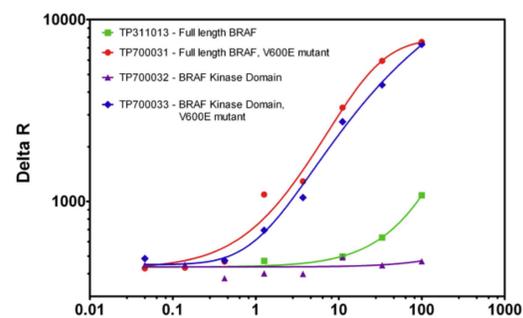
Bioactivity of IDH1 proteins



IDH1 proteins (µg)

Enzymatic activities of wild-type or mutant IDH1 proteins were determined by monitoring NADPH formation based on the absorbance at 345nm.

Bioactivity of BRAF proteins



BRAF proteins per well (ng)

BRAF kinase activity was measured in an HTRF® assay.

Scan for a video on  
Expression Hosts for Recombinant Proteins



# Primary Antibodies

## Better Antigens, Better Antibodies, Better Assays

### Primary Antibodies

- Monoclonal and polyclonal antibodies against targets of various pathways
- Money back guarantee for validated applications



A positive control for WB is available at nominal cost!  
While overexpression lysate is available

### Feature Product



#### TrueMAB™ Mouse Monoclonal Antibody

- Generated against full-length human proteins produced in human cells
- Recognizes native epitopes
- Extensively validated for WB, IHC, IF/ICC, IP, Flow cytometry, ELISA and Luminex
- Available in bulk, carrier-free (BSA/glycerol-free) formulation and conjugates

### Antibodies against Epitope Tags and Fluorescent Proteins

- Epitope tags:  
DDK (FLAG® tag), Myc, HA, His, GST, V5

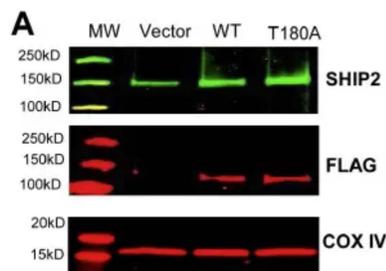


Figure from citation: Western blot analysis of DDK-fused protein level (red) in SHIP2-FLAG TIME transfectants by using anti-DDK antibody.

- A broad selection of antibodies against fluorescent proteins

Cyan	Green	Yellow	Orange	Red		Far Red	Photo-switchable
AmCyan1	AcGFP1	mBanana	mOrange	AsRed2	mCherry	E2-Crimson	Dendra2
eCFP	eGFP	mYFP	mOrange2	DsRed-Express2	mRFP	mKate	PS-CFP2
mBFP	mGFP	tYFP		DsRed-Monomer	mStrawberry	mPlum	
mCFP	tGFP	ZsYellow1		DsRed2	tdTomato	mRaspberry	
	ZsGreen1			KillerRed	tRFP		

### Other Antibody Products

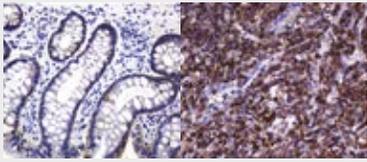
- Secondary antibodies
- Loading control antibodies: GAPDH, Actin, Tubulin, Hsp90
- Western blot reagents



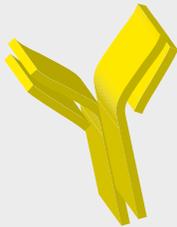
Scan to watch our video on TrueMAB

# Whole Product Solution for Anatomic Pathology

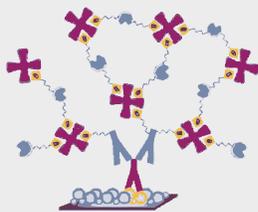
## Linking Genes and Proteins to Cancer Biology



Cancer Tissues



IHC Antibodies



Detection Systems

### TissueFocus™ Products

Over 140,000 human normal and cancer tissue samples

- FFPE & frozen tissue sections
- Online search available



### UltraMAB™ The only antibody tested for specificity

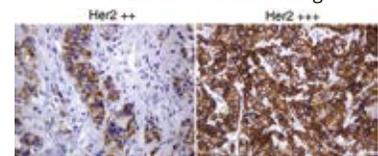
Non-specific antibodies would generate incorrect and false-positive diagnosis. OriGene developed a novel technology – the High-density Protein Microarray – to validate antibody specificity, and to ensure every UltraMAB monoclonal antibody is mono-specific to its target. More than 17,000 human proteins are included in the microarray, covering more than 80% of the human genome. UltraMAB is also validated extensively for its performance under clinical conditions.

Antibody specificity tested by  
High-Density Protein Microarray



Diagram of antibody specificity test with High-density Protein Microarray (results in duplicate)

IHC validated in clinical settings



IHC analysis of human breast carcinoma using HER2 antibody (Cat# UM500036)

### Selected UltraMAB Targets

ALK, Beta-Catenin, BMP4, CD2, CD4, CD5, CD20, EGFR, EPCAM, ERCC1, ERG, FOXP1, GFAP, HE4, HER2, Ki67, KRT8, p53, PD1, PDL1, PECAM1, S100P, SERPINB4, SOX5, XPF, XRCC1

### Polymer HRP and AP Detection Kits

- For human, mouse, rat and other tissues
- Multiple staining for human and other animal tissues

### IHC Accessory Products

- Chromogen kits
- Antigen retrieval buffers
- IHC reagents and more

### Featured Product

- **Klear™ Human-on-Human Kit:** detect human primary antibody on human/primate tissue Cat# GB200002
- **Klear™ Mouse-on-Mouse Kit:** detect mouse primary antibody on mouse/rat tissue Cat# GB200006

Video on UltraMAB &  
Ab Specificity test



# Human Tissue Bank

## Arrays, Sections, DNA, RNA & Proteins from Normal and Cancer Tissues

OriGene has developed comprehensive human cancer and normal tissue products from its biorepository of over 140,000 high quality human tissues.

Tissues collected from U.S. medical centers under strict ethical requirements and IRB protocols

### TissueFocus™ Individual Products

- **Tissue total RNA and genomic DNA:** Samples were derived from our high quality frozen tissues after rigorous QC testing. Agilent Bioanalyzer 28S/18S ratio, Electropherogram, A260/A280 ratio and PCR images available upon request.
- **Tissue Protein Lysate:** Protein lysates were generated using a Modified RIPA buffer (no SDS) in the presence of protease and phosphatase inhibitors. Protein quantification is performed using the BCA Protein Assay.
- **Tissue Sections:** Frozen and FFPE tissue sections can be used for applications such as IHC, ISH, LCM and RNA/DNA/Protein extractions. Each section is freshly cut onto a SuperFrost positively charged glass slide, and offered as a set of 5 slides (each 5 micron thickness).

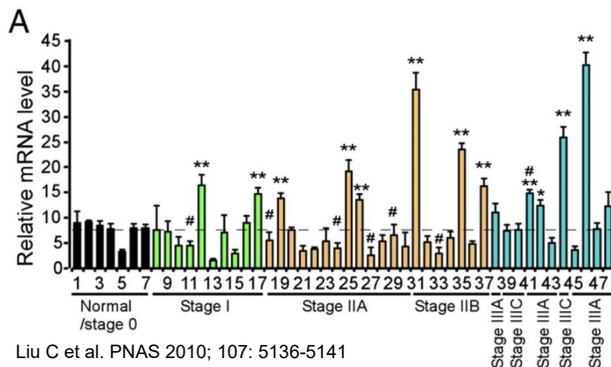
**Tips!** How to search for a specific tissue sample?

- Use **TissueFocus™ Search Tool** on <https://www.origene.com/products/tissues> to get details including diagnosis, disease stage, race, gender, age, etc.
- Or, let our expert clinical data managers help you: [tissue@origene.com](mailto:tissue@origene.com)



### TissueScan™ cDNA Array

qPCR gene expression results of hundreds of tissues in 2 hours



Researchers at Washington University School of Medicine discovered a new cancer biomarker LRP6 that could define a new subtype of breast cancer by using OriGene's TissueScan™ cDNA arrays.

TissueScan™ arrays have been cited in hundreds of publications



#### TissueScan Offerings

Cancer Survey Array	96 samples / 8 cancer types	
	384 samples / 22 cancer types	
Cancer Specific Array	Brain	Melanoma
	Breast	Ovary
	Colon	Pancreas
	Head & Neck	Prostate
	Kidney	Sarcoma
	Lymphoma	Thyroid

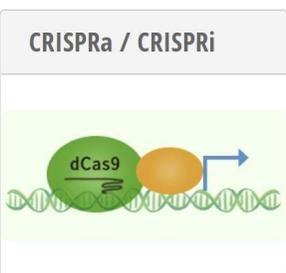
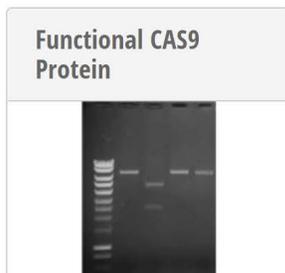
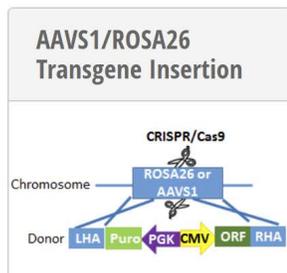
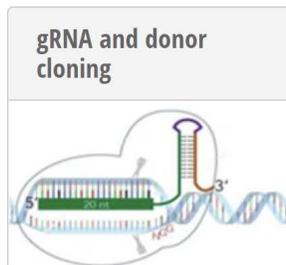
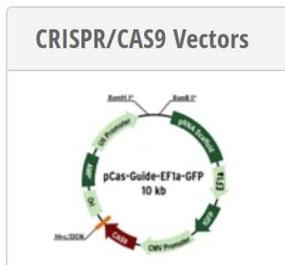


New to TissueScan™ ?  
Scan to watch a video protocol!

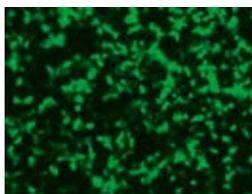
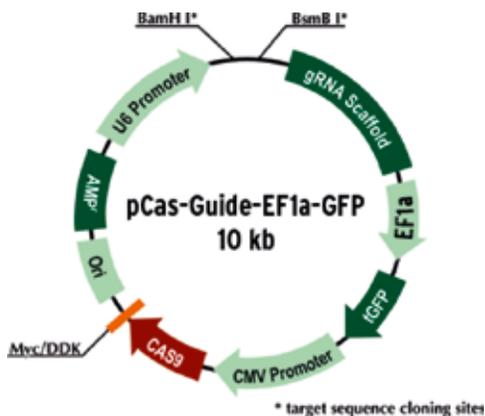
# Genome Editing with CRISPR/Cas9

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 mechanisms.

## CRISPR Products

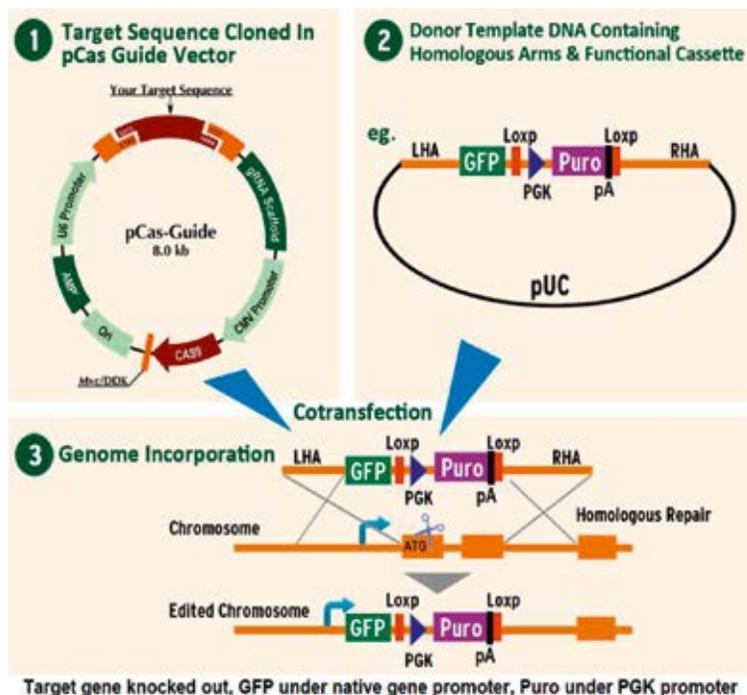


## All-In-One-Vector



pCas-Guide-EF1a-GFP was transfected into HEK293 cells. The fluorescence is GFP expression.

## Scheme of knockout / knockin kit



Scan to learn more about  
CRISPR/Cas9



## **OriGene, Your Partner in Research, Diagnostics and Beyond**

- cDNA Clones/Lenti Particles
- CRISPR/Cas9/sgRNA
- Recombinant Proteins
- Antibodies
- RNAi
- Normal & Cancer Tissues



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