Product Overview
The Evolving Product Lines

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

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...

Day 1
Plating for single colonies

Day 2
Inoculate for bacterial expansion

Day 3
Plasmid isolation and verification

Day 4
Start your experiments

Start here with OriGene

OriGene: Clones arrive as purified plasmid DNA

Other Providers:
Clones arrive as bacterial stock

OriGene cDNA clone offerings

TrueClone

Full length cDNA

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

TrueORF

Full length cDNA
- Tag

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

TrueORFGold

Expression Validated
Sequence Verified
Next-Day Shipment

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

Scan to watch our video on cDNA clones
Easy Shuttling: The ORF insert can be shuttled to > 80 destination vectors

<table>
<thead>
<tr>
<th>Vector</th>
<th>Vector SKU</th>
<th>Vector Map</th>
<th>Fusion Tag</th>
<th>Ideal Application</th>
<th>ORF Clone SKUs</th>
<th>Examples</th>
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<tbody>
<tr>
<td>pCMV6-Entry</td>
<td>PS100001</td>
<td></td>
<td>C-terminal Myc-DDK</td>
<td>Detection and purification of over-expressed protein</td>
<td>RC2XXXXX</td>
<td> </td>
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<tr>
<td>pCMV6-AC-GFP</td>
<td>PS100010</td>
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<td>C-terminal Myc-DDK</td>
<td>Tracking the over-expressed protein in transfected cells</td>
<td>RG2XXXXX</td>
<td> </td>
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</tbody>
</table>

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**

- 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**

- **Puro Vectors**
  - Lenti-ORF Myc/DDK-tagged Puro
  - Lenti-ORF GFP-tagged Puro

- **Non-Puro Vectors**
  - Lenti-ORF Myc/DDK-tagged
  - Lenti-ORF GFP-tagged

**Lenti shRNAs**

- Three major functional elements
  - shRNA under U6 promoter
  - Puro selection marker
  - GFP as a reporter

**Highly effective Lenti-packaging kit**

- Cat# TR30037
  - Optimized for high efficiency
  - Package 3rd generation vectors
  - Transfection reagent included

**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

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HEK293 cells transduced with lenti GFP virus
**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 (≥70%)
  - Lenti particles available
  - Each kit contains 4 shRNAs + 1 scrambled control

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 (≥70%)
  - Cost effective
  - Each kit contains 3 gene-specific siRNAs + 1 negative control

**siRNA Transfection Reagent: siTRAN 1.0**
- Dual purpose reagent – transflect both siRNA duplex and cDNA
- High transfection efficiency and low cytotoxicity
- Proven effective in multiple cell lines and primary cells

**microRNA Tools**
- From miRNA detection, quantification to target identification

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**Scan to watch our video on shRNA**
Real-time PCR & Lab Essentials

Comprehensive Tools for Gene Expression Analysis

- 1st Strand cDNA Synthesis Kit
- qPCR Master Mix
- qPCR Copy Number Standards
- Gene-specific Primer Assays for individual genes of Human & Mouse
- Gene-specific Primer Assays for microRNA
- Primer Panels for Gene Families and Pathways
- Primer Panels for microRNA Collections

RNA Purification | 1st Strand cDNA | qPCR Primers | qPCR Reagents

- Total RNA Purification Kit
- miRNA Purification Kit

Molecular Tools for Your Day-to-Day Needs

Transfection Reagents, Tailored for Your Unique Needs

TurboFectin 8.0™
Lipid/histone based transfection
- Wide spectrum: over 100 cell lines or primary cells tested

Viromer®
Virus-like polymer
- Formulated for hard-to-transfect cells

MegaTran 1.0
Polymer based transfection
- Cost effective compared to other commonly used transfection reagents

siTran 1.0
For transfection of siRNA duplex
- Successfully applied to many cell lines such as T-cell, lymphocytes and cancer cells

PowerPrep® Plasmid Purification Kits

- High Yield... Low Endotoxins... No Syringes...
- New! 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**

<table>
<thead>
<tr>
<th>Features</th>
<th>Mammalian</th>
<th>Yeast</th>
<th>Insect Cells</th>
<th>E. coli</th>
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</thead>
<tbody>
<tr>
<td>Protein folding and purification</td>
<td>Optimal</td>
<td>Poor</td>
<td>Low</td>
<td>Poor</td>
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<tr>
<td>Post-translational processing</td>
<td>Yes</td>
<td>Low</td>
<td>Low</td>
<td>No</td>
</tr>
<tr>
<td>Authenticity &amp; Bioactivity</td>
<td>Native &amp; Active</td>
<td>Poor</td>
<td>Poor</td>
<td>Very Poor</td>
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<tr>
<td>Time &amp; Efforts required</td>
<td>Time-consuming &amp; Expensive</td>
<td>Low cost</td>
<td>High yield</td>
<td>Low cost &amp; High yield</td>
</tr>
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</table>

**Bioactivity of Purified Proteins in Functional Assays**

**Bioactivity of IDH1 proteins**

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 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

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

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

Antibodies against Epitope Tags and Fluorescent Proteins

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

  OriGene's DDK (FLAG® tag) antibody (Cat# TA50011) is shown to be more sensitive than anti-FLAG M2 from vendor S.

- A broad selection of antibodies against fluorescent proteins

<table>
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<tr>
<th>Cyan</th>
<th>Green</th>
<th>Yellow</th>
<th>Orange</th>
<th>Red</th>
<th>Far Red</th>
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<tr>
<td>AmCyan1</td>
<td>eCFP</td>
<td>mBFP</td>
<td>mOrange</td>
<td>AsRed2</td>
<td>mCherry</td>
<td>E2-Crimson</td>
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<td>mGFP</td>
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<td>mOrange2</td>
<td>DsRed-Express2</td>
<td>mRFP</td>
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<td>mStrawberry</td>
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<td>ZsYellow1</td>
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<td>PS-CFP2</td>
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</tbody>
</table>

Other Antibody Products

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

Scan to watch our video on TrueMAB
Linking Genes and Proteins to Cancer Biology

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.

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
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.

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

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

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

Scheme of knockout / knockin kit

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

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