Product Overview

The Evolving Product Lines

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

Day 1
Plating for single colonies

Day 2
Inoculate for bacterial expansion

Day 3
Plasmid isolation and verification

Day 4
Start your experiments

Other Providers:
Clones arrive as bacterial stock

OriGene:
Clones arrive as purified plasmid DNA

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

TrueORF Gold

- Expression Validated
- Sequence Verified
- Next-Day Shipment

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

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

<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>
</tr>
</thead>
<tbody>
<tr>
<td>pCMV6-Entry</td>
<td>PS100001</td>
<td>pCMV6-Entry Vector 4.0 kb</td>
<td>C-terminal Myc-DDK</td>
<td>Detection and purification of over-expressed protein</td>
<td>RC2X00XX</td>
<td>Myc-DDK tagged ORF clone can be applied to study protein expression in various applications</td>
</tr>
<tr>
<td>pCMV6-AC-GFP</td>
<td>PS100010</td>
<td>pCMV6-AC-GFP Vector 6.0 kb</td>
<td>C-terminal tGFP</td>
<td>Tracking the over-expressed protein in transfected cells</td>
<td>RG2X00XX</td>
<td>GFP tagged ORF clone can be used to track fusion protein cellular localization</td>
</tr>
</tbody>
</table>

Epitope tagging | FP tagging | Selection markers | Lentiviral expression | Bacterial expression |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Myc-DDK</td>
<td>GFP</td>
<td>Puromycin</td>
<td>Myc-DDK</td>
<td>His</td>
</tr>
<tr>
<td>HA</td>
<td>RFP</td>
<td>Neomycin</td>
<td>GFP</td>
<td>GST</td>
</tr>
<tr>
<td>His</td>
<td>YFP</td>
<td>Blasticidin</td>
<td>RFP</td>
<td></td>
</tr>
<tr>
<td>3x-DDK</td>
<td>CFP</td>
<td>Hygromycin</td>
<td>YFP</td>
<td></td>
</tr>
<tr>
<td>FC</td>
<td>mBFP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mKate</td>
<td></td>
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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**

**Lenti-ORF**
- Plasmids
- Particles

**Lenti-shRNA**
- Plasmids
- Particles

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

**Lenti-ORF clones, 4 vector options**

**Puro Vectors**
- pLenti-C-Myc-DDK-P2A-Puro 7.1 kb
- pLenti-C-mGFP-P2A-Puro 7.0 kb

**Non-Puro Vectors**
- pLenti-C-Myc-DDK 6.4 kb
- pLenti-C-mGFP 7.1 kb


**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

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 – transfect 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

<table>
<thead>
<tr>
<th>Global miRNA profiling</th>
<th>qPCR Master Mix</th>
<th>qPCR Primer Panels</th>
<th>miRNA expression perturbation</th>
<th>miRNA expression plasmids</th>
<th>Transfection reagents</th>
</tr>
</thead>
<tbody>
<tr>
<td>miRNA detection &amp; quantification</td>
<td>miRNA primer pairs</td>
<td>miRNA copy number standards</td>
<td>miRNA target identification</td>
<td>3' UTR reporter clones</td>
<td>Expression cDNA clones</td>
</tr>
</tbody>
</table>

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

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
- Total RNA Purification Kit
- miRNA Purification Kit
- 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

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...
- 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></th>
<th>Mammalian</th>
<th>Yeast</th>
<th>Insect Cells</th>
<th>E. coli</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein folding and purification</td>
<td>Optimal</td>
<td>Poor</td>
<td>Low</td>
<td>Poor</td>
</tr>
<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>
</tr>
<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>
</tbody>
</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

**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.

**Other Antibody Products**
- Secondary antibodies
- Loading control antibodies: GAPDH, Actin, Tubulin, Hsp90
- Western blot reagents

Scan to watch our video on TrueMAB.
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](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

TissueScan Offerings

<table>
<thead>
<tr>
<th>Cancer Survey Array</th>
<th>96 samples / 8 cancer types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer Specific Array</td>
<td>384 samples / 22 cancer types</td>
</tr>
</tbody>
</table>

- **Brain**
- **Breast**
- **Colon**
- **Head & Neck**
- **Kidney**
- **Lymphoma**
- **Melanoma**
- **Ovary**
- **Pancreas**
- **Prostate**
- **Sarcoma**
- **Thyroid**

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

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