The World's Largest Collection of cDNA Clones

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

- Comprehensive coverage: human, mouse, rat and virus
- Expression clones driven by CMV promoter
- 10 µg transfection-ready plasmids

Start here with other vendors or...

Start here with OriGene

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

- 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

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

Scan to watch our video on cDNA clone
Convenient Choices of TrueORF 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 4.3 kb</td>
<td>C-terminal Myc-DDK</td>
<td>Detection and purification of over-expressed protein</td>
<td>RC2XXXXX</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 6.0 kb</td>
<td>C-terminal tGFP</td>
<td>Tracking the over-expressed protein in transfected cells</td>
<td>RC2XXXXX</td>
<td>GFP tagged ORF clone can be used to track fusion protein cellular localization</td>
</tr>
</tbody>
</table>

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

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).

Epitope tagging | FP tagging | Selection markers | Lentiviral expression | Bacterial expression |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<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>3xDDK</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></td>
<td></td>
<td></td>
<td></td>
<td>mKate</td>
</tr>
</tbody>
</table>

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# TR30022) for generating lentivirus

*Transfection reagent included!*
Gene Synthesis Service

Blue Heron, OriGene’s gene synthesis branch, offers a complete solution for gene research

- Genome editing
- Codon optimization
- Complex sequence synthesis (GC rich, complex repeats)
- Variant single and pooled clone libraries
- Whole genome synthesis
- Custom vector synthesis and cloning

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 guide RNA will lead to double-stranded break in a sequence-specific manner. Genome editing can be pursued via repair mechanism.

- All-in-one vectors (Cas9 and guide RNA)
- T7 vector series—Cas9 mRNA and gRNA IVT production
- Custom cloning services

Scan to watch our webinar on CRISPR/Cas9
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%)
- Highly published with over 500 citations
- Each kit contains 4 shRNAs + 1 scrambled control

We recommend the highly effective Lenti-vPAK (Cat# TR30022) 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 – transf ect 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 targets</td>
<td>3’ UTR reporter clones</td>
<td>Expression cDNA clones</td>
</tr>
</tbody>
</table>

Scan to watch our video on shRNA
Real-time PCR
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 Collection

RNA Purification 1st Strand cDNA qPCR Primers qPCR Reagents

- 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 Collection

Lab Essentials
Molecular Tools for Your Day-to-Day Needs

Transfection Reagents, Tailored for Your Unique Needs

Transfection Reagents

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

- Magnetofection™
  - Magnetic transfection reagent
  - Widely used for primary cells and neurons

- 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!
Recombinant Human Proteins

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-terminally 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>
</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 and 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

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

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
- Recognize 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 included for FREE!
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.

The broadest selection of antibodies against fluorescent proteins

<table>
<thead>
<tr>
<th>Cyan</th>
<th>Green</th>
<th>Yellow</th>
<th>Orange</th>
<th>Red</th>
<th>Far Red</th>
<th>Photo-switchable</th>
</tr>
</thead>
<tbody>
<tr>
<td>AmCyan1</td>
<td>AcGFP1</td>
<td>mBanana</td>
<td>mOrange</td>
<td>mCherry</td>
<td>E2-Crimson</td>
<td>Dendra2</td>
</tr>
<tr>
<td>eCFP</td>
<td>eGFP</td>
<td>mYFP</td>
<td>mOrange2</td>
<td>mRFP</td>
<td>mKate</td>
<td></td>
</tr>
<tr>
<td>mBFP</td>
<td>mGFP</td>
<td>tYFP</td>
<td>AsRed2</td>
<td>mStrawberry</td>
<td>mPlum</td>
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<tr>
<td>mCFP</td>
<td>tGFP</td>
<td>ZsYellow1</td>
<td>DsRed-Express2</td>
<td>tdTomato</td>
<td>mRaspberry</td>
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<tr>
<td></td>
<td>ZsGreen1</td>
<td></td>
<td>DsRed-Monomer</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DsRed2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>KillerRed</td>
<td></td>
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</tr>
</tbody>
</table>

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

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

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, p63, 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

Feature Product
- Klear™ Human-on-Human Kit: detect human primary antibody on human/primate tissue
- Klear™ Mouse-on-Mouse Kit: detect mouse primary antibody on mouse/rat tissue

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.

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 www.origene.com/Tissue/ 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**

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

**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>Brain, Breast, Colon, Head &amp; Neck, Kidney, Lymphoma</td>
</tr>
<tr>
<td></td>
<td>Melanoma, Ovary, Pancreas, Prostate, Sarcoma, Thyroid</td>
</tr>
</tbody>
</table>

New to **TissueScan™**?
Scan to watch a video protocol!
OriGene International Distributors

AUSTRALIA
Australian Biosearch www.aust-biosearch.com.au
Diagnostic Technology www.diagnostictechnology.com.au

AUSTRIA
VWR International GmbH at.vwr.com
Biomedica Medizinprodukte www.biomedica.co.at

BELGIUM
SanBio, BV www.sanbio.nl

BRAZIL
Sinapse Biotechnologia www.sinapsebiotecnologia.com.br

CANADA
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BioNordika Denmark A/S www.bionordika.dk
Electra-Box Diagnostica ApS www.electrabox.com

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BioCat GmbH www.biocat.com
VWR International GmbH de.vwr.com

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Biogenuix Medystem Pvt Ltd www.biogenuix.com
Everon Life Sciences www.everonlife.com

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Aquilant Scientific (Unitech) www.aquilantscientific.ie

ISRAEL
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ITALY
TEMA ricerca srl www.teamaricerca.com

JAPAN
Cosmo Bio Co., Ltd. www.cosmobio.co.jp
Funakoshi CO., LTD www.funakoshi.co.jp
Nacalai Tesque www.nacalai.co.jp

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Electra-Box Diagnostica Oy www.electrabox.com

LITHUANIA
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LUXEMBOURG
SanBio, BV www.sanbio.nl

MALAYSIA
Next Gene Scientific nextgene.my

MEXICO
Cipquim S.A de C.V www.cipquim.com

NETHERLANDS
SanBio, BV www.sanbio.nl

NEW ZEALAND
Australian Biosearch www.aust-biosearch.com.au

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Electra-Box Diagnostica AS www.electrabox.com

POLAND
STI www.sti.biz.pl

RUSSIA
Laboratory Diagnostics Co. www.LD.ru

SINGAPORE
Gene-Ethics (Asia) Pte Ltd www.gene-ethics-asia.com

SOUTH KOREA
Fusion Technology Co., Ltd www.f-t.co.kr
Koram Biotech Corp. www.korambiotech.com

SPAIN
Quimigen S.L. www.quimigen.com
Abynshe Biopharma S.L. www.abynshe.com

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Electra-Box Diagnostica Oy www.electrabox.com

SWITZERLAND
LabForce www.labforce.ch

TAIWAN
Level Biotechnology, Inc. www.level.com.tw
GenDiscovery Biotechnology Inc. www.gendiscovery.com.tw

TURKEY
Hemakim AS. www.hemakim.com.tr

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Cambridge Bioscience www.bioscience.co.uk
Insight Biotechnology Limited www.insightbio.com

MIDDLE EAST
UFC Biotech www.ufcbiotech.com
OriGene, Your Partner in Research, Diagnostics and Beyond

- cDNA Clones
- RNAi
- Recombinant Proteins
- Antibodies
- Anatomic Pathology
- Normal & Cancer Tissues
- Immunoassays & Luminex
- CRISPR-CAS9 Kits & Vectors