

# CCSB Human ORFeome Clones and Collection

Cat #OHS1770, OHS4103, OHS4108, OHS4112, OHS4297, OHS4838, OHS4910, OHS4913, OHS4922, OHS4925, OHS4929, OHS4939, OHS4941, OHS5016, OHS5029, OHS5030, OHS5031, OHS5177

## Product Description:

The Center for Cancer Systems Biology of the Dana-Farber Institute has created a collection of human open reading frames (ORFs) cloned into a Gateway-entry vector, known as the CCSB Human ORFeome Collection. The Gateway-adapted ORFs are ideal for easily moving gene content into compatible destination vectors for various proteomics studies. The native stop codons have been removed from the ORFs for maximum flexibility.

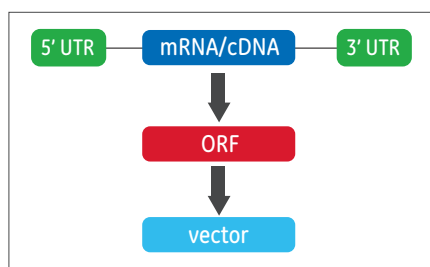


Figure 1. Cloning Schematic.

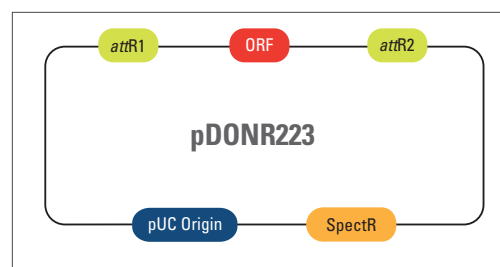


Figure 2. pDONR223 Vector Schematic.

Human ORF clones are shipped as a bacterial cultures of DH5α in LB broth with 8% glycerol and spectinomycin (50 µg/mL).

## Background:

This collection, also known as hORFeome v5.1, contains over 15,000 individual clones representing more than 12,000 unique genes. These clones are derived from fully sequenced Mammalian Gene Collection (MGC) full-length cDNAs and have been subsequently cloned into a Gateway recombinational entry vector. Each coding sequence (CDS) was amplified for only 25 cycles with gene-specific primers and high-fidelity polymerase, minimizing the risk of PCR-induced mutations. The human ORFeome version 5.1 (hORFeome v5.1) includes previous human ORFeome releases (v1.1 and 3.1), as well as approximately 3,000 additional constructs.

Mammalian Gene Collection ([dharmacon.gelifsciences.com/mammalian-cdna/mgc-cdnas](http://dharmacon.gelifsciences.com/mammalian-cdna/mgc-cdnas))

Center for Cancer Systems Biology ([horfdb.dfci.harvard.edu/hv5](http://horfdb.dfci.harvard.edu/hv5))

## Obtaining Clone Information:

The Dharmacon Search provides a rapid means of obtaining clone information. Enter the Clone ID or catalog number of your clone in the query box. Expand the clone information by clicking on the "+" symbol on the left of the clone description. The vector information is in the "Details" tab and the sequence accession number is provided in the "Sequence" tab. The accession link will take you to NCBI for the sequence of the MGC clone from which your Human ORFeome clone was created. The Human ORFeome clone contains only the coding sequence (CDS) of the MGC clone without the stop codon.

Details	Sequence	Documents
Clone ID:	3224	
Source Clone:	BC000627	
Catalog Number:	OHS1770-202314694	
Vector Map:	pDONR223	
Vector Type:	Gateway Entry	
Antibiotics (Bacterial):	Spectinomycin (Concentration: 50 µg/ml, Resistant Range: 50-50 µg/ml)	
Sequencing Primers:	5' - TTTTCCAGTCACGAGGTTGTAATAACGAGGCCAGT - 3'	
3' Restriction Site:	attL2	
5' Restriction Site:	attL1	

## Shipping and Storage:

Individual clones are shipped at room temperature and may be stored for up to one week at +4 °C. They may be stored indefinitely at -80 °C. Plates are shipped on dry ice and should be stored at -80 °C. To allow any CO<sub>2</sub> that may have dissolved into the media from the dry ice in shipping to dissipate, please store plates at -80 °C for at least 48 hours before thawing.

## Glycerol Stock Replication:

Culture clones in LB broth with 8% glycerol\* and spectinomycin (50 µg/mL) at 37 °C for 18-24 hours.

\*Glycerol can be omitted from the medium if you are culturing for plasmid preparation. If making copies of the constructs for long term storage at -80 °C, 8% glycerol is required.

## Replication of Individual Clones:

Once the clone has been streak isolated and the identity of the strain has been confirmed, we recommend making a stock of the pure culture. Grow the pure culture in LB broth + appropriate antibiotic. Transfer 920 µL of culture into a polypropylene tube and add 80 µL sterile glycerol to make an 8% glycerol freezing solution. Vortex the culture to evenly mix the glycerol throughout the culture. The culture can be stored indefinitely at -80 °C.

## Replication of 96-Well Plates:

### Prepare Target Plates

- Dispense ~160 µL of sterile LB medium into 96-well microtiter plates. The LB should be supplemented with 8% glycerol\* and the appropriate antibiotic.  
\*Glycerol can be omitted from the medium if you are culturing for plasmid preparation. If making copies of the constructs for long term storage at -80 °C, 8% glycerol is required.

### Prepare Source Plates

- Remove the foil seals from the source plates. Removing the seals while the source plates are frozen will minimize cross-contamination.
- Thaw the source plates with the lids on. Wipe any condensation underneath the lid with a paper wipe dampened with alcohol.

### Replicate

- Gently place a disposable replicator into the thawed source plate and lightly move the replicator around inside the well to mix the culture. Make sure to scrape the bottom of the plate of the well.
- Gently remove the replicator from the source plate and gently place the replicator into the target plate. Gently move the replicator back and forth in the target plate to transfer cells.
- Discard the replicator.
- Place the lids back on the source plates and target plates.
- Seal the source plates, being mindful to avoid cross contamination.
- Repeat this process until all plates have been replicated.
- Return the source plates to the -80 °C freezer.
- Place the inoculated target plates in a 37 °C incubator. Incubate the plates for 12-24 hours.

## FAQs/Troubleshooting:

### What is the sequencing primer for the pDONR223 vector?

5' - TTTTCCAGTCACGACGTTGTAAAACGACGGCCAGT - 3'

Also, there is a 20 bp match between the T7 promoter and the "reverse primers" region of pDONR223. The so-called "T7 short" primer ([cancer-seqbase.uchicago.edu/primers.html](http://cancer-seqbase.uchicago.edu/primers.html)) sequence (TAATACGACTCACTATAGGG) matches perfectly.

### What strain of *E.coli* are the CCSB Human ORFeome Collection clones in?

DH5alpha.

### How can I find the sequence of a CCSB Human ORFeome Collection?

In order to find the sequence of a Human ORFeome clone, search our gene query using the clone ID or catalog number of your clone. The accession associated with the clone represents the 5' end sequence performed by the Vidal lab to confirm that the ORF from the MGC clone template was present. If you click on this accession, the resulting description will read: "Full Length cDNA from the Mammalian Gene Collection Homo sapiens cDNA 5- similar to \_\_\_\_\_" and will then list a BC accession. If you take this accession, enter it into NCBI and search for the corresponding nucleotide result, you will find the coding sequence information for the MGC clone from which the Human ORFeome clone was created. The Human ORFeome clone contains the coding sequence from the MGC clone, with the stop codon removed. To view this coding sequence for the MGC clone, click on the "CDS" link in blue on the left side of the BC accession result. This is the CDS or ORF of the MGC clone, and the 2 Human ORFeome clone contains this sequence, minus the stop codon.

### Do the CCSB Human ORFeome clones have a stop codon?

No.

For answers to questions that are not addressed here, please email technical support at [dharmacon.gelifsciences.com](mailto:dharmacon.gelifsciences.com) with your question, your sales order or purchase order number and the catalog number or clone ID of the construct or collection with which you are having trouble.

## References:

1. Rual et al. Human ORFeome Version 1.1: A platform for reverse proteomics. *Genome Research* 2004 **14**:2128-2135
2. Walhout et al. GATEWAY recombinational cloning: application to the cloning of large numbers of open reading frames or ORFeomes. *Methods Enzymol* 2000 **328**: 575-592
3. Goffeau et al. Life with 6000 genes. *Science* 1996 **274**(5287): 546, 563-537.
4. Hartley, J.L., G.F. Temple, and M.A. Brasch. DNA cloning using *in vitro* sitespecific recombination. *Genome Res* 2000 **10**: 1788-1795.

## Useful Websites:

CCSB Human ORFeome 5.1: [horfdb.dfci.harvard.edu/](http://horfdb.dfci.harvard.edu/)

The Mammalian Gene Collection: [mgc.nci.nih.gov/](http://mgc.nci.nih.gov/)

Restriction Mapper: [restrictionmapper.org/](http://restrictionmapper.org/)

NCBI: [ncbi.nlm.nih.gov/](http://ncbi.nlm.nih.gov/)

## Disclaimer

GE Healthcare Dharmacon ("Dharmacon") is a distributor of multiple gene expression clone collections (cDNAs and ORFs). These clone collections were generated by groups outside of Dharmacon and thus the quality of the collections is largely dependent upon what Dharmacon received from these groups. Specific clone information and plate coordinates were provided to Dharmacon by the suppliers of these clone collections. Dharmacon has not sequence verified each individual clone from these collections. These collections and individual clones are distributed "as is" with no additional product validation or guarantees. Dharmacon has established quality procedures to ensure that individual clones are picked from the identified well in a plate, grown on the correct antibiotic, and are free of phage contamination. Due to the quality of the information provided to Dharmacon, the clone you receive might not match the expected clone. If this occurs, please contact Technical Support (ts.dharmacon@ge.com)

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1.800.235.9880; 303.604.9499 if you have any questions.