

GPCR CloneSet™

OVERVIEW

G protein-coupled receptors (GPCRs) form a large superfamily of membrane proteins that modulate sensory perception, chemotaxis, neurotransmission, cell communication, and many other vital physiological events. Characterized by their cell-surface localization and tissue-specificity, these protein receptors are the targets of 50-60% of all existing medicines including well-known β -blockers and anti-histamine therapeutics. It is estimated that 340-400 pharmaceutically relevant GPCRs exist in the human genome, although many have been classified as orphan receptors because their endogenous ligands have not yet been identified. It is generally accepted that a better understanding of the function of these receptors and their structure will help in the design of drugs for the treatment of GPCR-related diseases.

OriGene Technologies has utilized high-throughput cloning and expression profiling to isolate and catalog the TrueClone™ Collection - a searchable gene bank of over 20,000 full-length human cDNA clones suitable for transfection and direct in vitro expression. From this comprehensive collection, OriGene has assembled the GPCR CloneSet™ - a subset of over 300 full-length human non-olfactory G protein-coupled receptors. All the genes in GPCR CloneSet are cloned in non-proprietary expression vectors directly downstream of a CMV promoter. The comprehensive nature of the GPCR CloneSet and the uniformity and expression-readiness of the cloning vector enables a system biology approach to drug-potency, drug-toxicity and ligand identification studies of this pharmaceutically important gene family.

QUALITY CONTROL

Each cDNA clone in the GPCR CloneSet was sequenced at its 5' end and the resulting sequence matched to a corresponding GPCR reference in the RefSeq database, with the inclusion of the initiation codon. The matching clone was then sequenced at its 3' end and that sequence re-matched to the same reference. When there are multiple variants at a particular GPCR gene locus, additional sequencing was performed to ensure the selected clone represents the intended reference. Lengths of the complete cDNA inserts are confirmed similar (variation <15%) to their expected size by release from the cloning vector using an appropriate restriction enzyme.

Occasionally, variants are identified that differ than those described in the public database. With no public reference available, such sequences are assigned a temporary reference number and marked with an asterisk "*".

SEARCH FOR A GENE

The GPCR CloneSet can be searched online at www.origene.com/hg/gpcr by nucleotide sequence or keyword. A complete CloneSet list can be also viewed.

GPCR CloneSet™

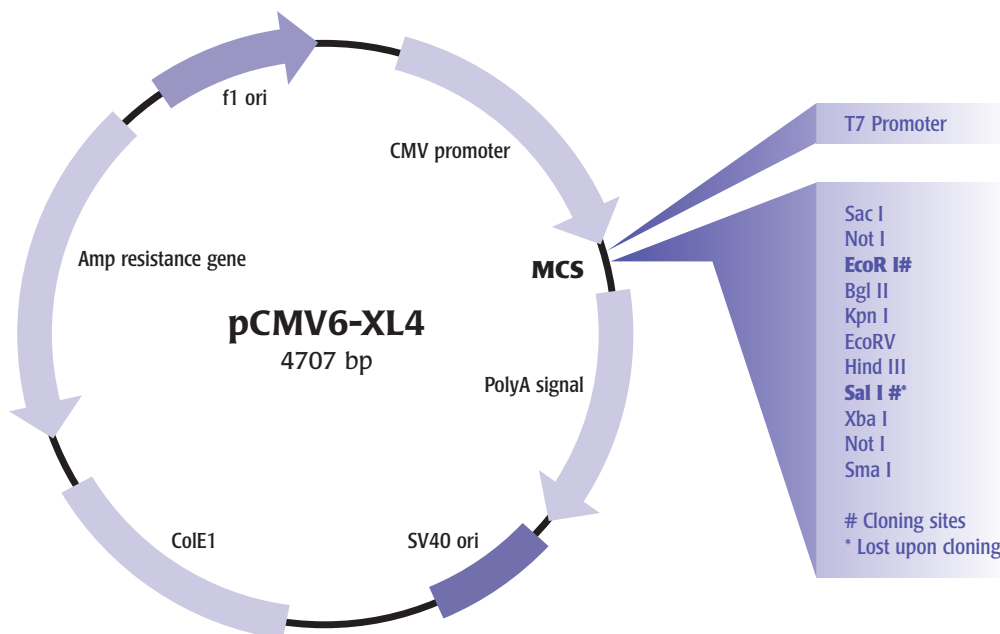
PRODUCT APPLICATION

All the genes in GPCR CloneSet are housed in a non-proprietary CMV vector, allowing for uniformed screening methods. The full-length cDNA fragment is inserted with the open reading frame located downstream from a eukaryotic transcriptional promoter capable of driving heterologous gene expression in a variety of mammalian cell lines in culture and tissues in transgenic mice. This feature facilitates the investigation of gene functions and the development of transfected or transgenic cells for drug screens. The expres-

sion vector also contains a prokaryotic transcriptional promoter which supports coupled transcription-translation of the cDNA sequence in an appropriate cell-free system. This approach can be utilized to generate recombinant proteins for target identification and testing activities in vitro. GPCR TrueClones may also be used to generate hybridization probes, for DNA immunization to generate antibodies, and to search for gene polymorphisms and alternatively spliced forms.

VECTOR MAP

VECTOR PCMV6-XL5 HAS A MINOR MODIFICATION OF PCMV-XL4. PCMV-XL6 IS IDENTICAL TO PCMV6-XL5 EXCEPT IT HAS AN SP6 PROMOTER INSTEAD OF THE T7 PROMOTER.



ORDERING INFORMATION & PRICING

For pricing information call Customer Service at 1-888-267-4436 ext. 1.

For Technical Support call 301-340-3188 ext. 2 or visit the OriGene website at www.origene.com

PRODUCT DELIVERY AND STORAGE

The GPCR CloneSet is available as E. coli glycerol stock in 96-well plates. Each well contains an E. coli strain harboring a G Protein-Coupled receptor gene in an expression vector.

The GPCR CloneSet is shipped on dry ice and should be stored at -80°C upon arrival.



TrueClone™ Collection Blue-Ribbon™ Reagents Rapid-Screen™ Tools

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