

Kinase CloneSet™

OVERVIEW

Protein kinases play key roles in most aspects of cellular process, including cell division, signal transduction, apoptosis and cell mobility. Because dysfunction of kinase genes results in a variety of diseases, such as cancer, diabetes and heart disease, this family of genes has captured academic and pharmaceutical research interest. With the completion of the human genome projects, scientists have been able to catalogue the "kinome" - the entire family of kinase genes in human genome. The kinome consists of 518 putative protein kinase genes and represents 1.7% of human gene repertoire (Manning, G. et al., Science 298:1912, 2002).

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 Kinase CloneSet™ - a subset of over 500 human kinase cDNA clones. All the genes in Kinase CloneSet are cloned in expression vectors directly downstream of a CMV promoter. The comprehensive nature of the Kinase CloneSet and the uniformity and expression-readiness of the cloning vector enable comprehensive functional studies on this gene family, including kinase inhibitor screening.

QUALITY CONTROL

Each cDNA clone in the Kinase CloneSet is sequenced at its 5' end and the resulting sequence matched to a corresponding known reference at the start-site of the longest ORF (Open Reading Frame). When a transcript has more than one putative ORF, or the ORF is located far downstream of the 5' end, transcript matching occurs at the extreme 5' end of the reference. That match is confirmed through 3' end sequencing and re-matched to the same reference. If the reference lacks 3' UTR sequences (because its ORF was generated by prediction) or contains a truncated 3' UTR, attempts are made to either 1) demonstrate that the 3' read is derived from genomic sequences located downstream of the putative ORF or 2) sequence the end of the putative ORF using a primer located immediately upstream of the termination codon. When 5' and 3' reads overlap, clones are sequenced in entirety. 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.

For those genes sharing multiple splicing variants at the same locus, the variable regions are sequence-verified to qualify a clone to a particular reference. Occasionally, identified variants different than those described in the public database. With no public reference available, such sequences are annotated with a reference number from the same locus, and marked with an asterisk "*".

SEARCH FOR A GENE

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

Kinase CloneSet™

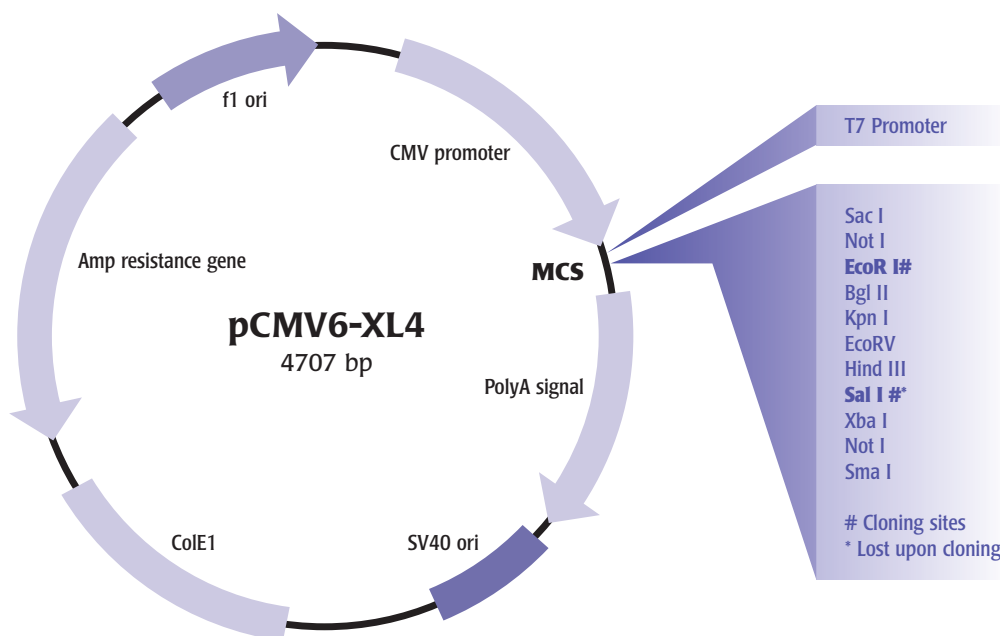
PRODUCT APPLICATION

All the genes in Kinase CloneSet are housed in a series of 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. Kinase 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 Kinase CloneSet is available as E. coli glycerol stock in 96-plates. Each well contains an E. coli strain harboring a kinase gene in an expression vector.

The Kinase 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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