

## Product datasheet for **SC109130**

### Cathepsin B (CTSB) (NM\_147781) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Cathepsin B (CTSB) (NM_147781) Human Untagged Clone
Tag:	Tag Free
Symbol:	Cathepsin B
Synonyms:	APPS; CPSB; RECEUP
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL5</u>
E. coli Selection:	Ampicillin (100 ug/mL)
Fully Sequenced ORF:	>NCBI ORF sequence for NM_147781, the custom clone sequence may differ by one or more nucleotides

```
ATGTGGCAGCTCTGGCCTCCCTCTGCTGCCTGCTGGTGTGGCCAATGCCCGGAGCAGGCCCTCTTTCC
ATCCCCTGTCGGATGAGCTGGTCAACTATGTCAACAAACGGAATACCACGTGGCAGGCCGGGCACAACCT
CTACAACGTGGACATGAGCTACTTGAAGAGGCTATGTGGTACCTTCTGGGTGGGCCCAAGCCACCCAG
AGAGTTATGTTTACCGAGGACCTGAAGCTGCCTGCAAGCTTCGATGCACGGGAACAATGGCCACAGTGTC
CCACCATCAAAGAGATCAGAGACCAGGGCTCCTGTGGCTCCTGCTGGCCTTCGGGGCTGTGGAAGCCAT
CTCTGACCGGATCTGCATCCACACCAATGCGCACGTGAGCGTGGAGGTGTCGGCGGAGGACCTGCTCACA
TGCTGTGGCAGCATGTGTGGGGACGGCTGTAATGGTGGCTATCCTGCTGAAGCTTGAACCTCTGGACAA
GAAAAGGCTGGTTTCTGGTGGCCTCTATGAATCCCATGTAGGGTGCAGACCGTACTCCATCCCTCCCTG
TGAGCACACGTC AACGGCTCCCGGCCCCCATGCACGGGGGAGGGAGATACCCCCAAGTGTAGCAAGATC
TGTGAGCCTGGCTACAGCCCACCTACAAACAGGACAAGCACTACGGATACAATTCCTACAGCGTCTCCA
ATAGCGAGAAGGACATCATGGCCGAGATCTACAAAAACGGCCCGTGGAGGGAGCTTTCTCTGTGTATTC
GGACTTCTGCTCTACAAGTCAGGAGTGTACCAACACGTACCCGGAGAGATGATGGGTGGCCATGCCATC
CGCATCCTGGGCTGGGGAGTGGAGAATGGCACACCCTACTGGCTGGTTGCCAACTCCTGGAACACTGACT
GGGGTGACAATGGCTTCTTTAAAATACTCAGAGGACAGGATCACTGTGGAATCGAATCAGAAGTGGTGGC
TGAATTCCACGCACCGATCAGTACTGGAAAAGATCTAA
```



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**5' Read Nucleotide Sequence:**

>OriGene 5' read for NM\_147781 unedited  
 AATACGACTCACTATAGGGCGGCCGGAATTCGGCACGAGGGCTGGGTGGATCTAGGATC  
 CGGCTTCCAACATGTGGCAGCTCTGGGCCTCCCTCTGCTGCCTGCTGGTGTGGCCAATG  
 CCCGGAGCAGGCCCTCTTCCATCCCCTGTGGATGAGCTGGTCAACTATGTCAACAAAC  
 GGAATACCACGTGGCAGGCCGGGCACAACCTTCTACAACGTGGACATGAGCTACTTGAAGA  
 GGCTATGTGGTACCTTCTGGGTGGGCCAAGCCACCCAGAGAGTTATGTTTACCGAGG  
 ACCTGAAGCTGCCTGCAAGCTTCGATGCACGGGAACAATGGCCACAGTGTCCCACCATCA  
 AAGAGATCAGAGACCAGGGCTCCTGTGGCTCCTGCTGGGCCTTCGGGGCTGTGGAAGCCA  
 TCTCTGACCGGATCTGCACGCACACCAATGCGCACGTCAGCGTGGAGGTGTCGGCGGAGG  
 ACCTGCTCACATGCTGTGGCAGCATGTGTGGGACGGCTGTAATGGTGGCTATCCTGCTG  
 AAGCTTGGAACTTCTGGACAAGAAAAGGCCTGGTTTCTGGTGGCCTCTATGAATCCCATG  
 TAGGGTGCAGACCGTACTCCATCCCTCCCTGTGAGCACCACGTCAACGGCTCCCGCCCC  
 CATGCACGGNGGAGGGGAGATACCCNCAGTGTAGCAAGATCTGTGAGCCTGGCTACAGCC  
 CGACCTACANACAGGGACAGCACTACGGATACAATTCCTACAGCGTCTCCAATAGCGAGA  
 AGGACATCATGGCCCAGATCTCCCAAACGGNCCCGTGNAGGAGCTTCTCTGTGTAT  
 TCGGACTTCTGCTCTACAGTCAGGAGTGTACAACACGTCACGGAGAGATGATGGTGGCC  
 ATGCATNCGCATNCTGGGCTGGGAGTGGAGATGGCACACCTA

**3' Read Nucleotide Sequence:**

>OriGene 3' read for NM\_147781 unedited  
 GTCATGGACCGCGCCGCAATCTANGATCGAGTTATTTTTTTTTTTTTTTTTTTTTTTTTT  
 TTTTTTTTTTTTTTTTTTAGTTGGGAAAAACCTTTTATTGGCACAGGCATTCTTGTTA  
 ACTTGACAGGGTGAAGCTGTAATTTTTCAAAAACAGTAAAGGCTGGTTTCTCCTAAACTA  
 TTTTCTTGGGGTAGTAAAAATACAGTGGGTCAAAAACAACCTCCTGACCCTTGGTTTCC  
 TTTTGAGCCGCGTCATTAGGAGGCAATCTGTAAACTAGCACAGGTCTCCCGCTGTTCCA  
 CTGGCTCACCCACATGATTAGCAGAGTGCACCAAAAAATAAAAACCTTCTATTAAGAATCA  
 TGCTGAGCACAACATCAGAGAGGTTGTGACATTGCAAACCTCGATAAATGCAGGGGGCCTG  
 GGAAACTGGCGTTCTCCAAGGGCTCCCAACACCATCTCTCCTTTGATTCTGTGACAAA  
 TGTGGAAGACTACTTGTGGAGGTAAGGTAAGTGGGGAACTGATGGGGGAACCTTATCCTGTT  
 AGGAACTCCGCTTTCCATTCTGCGTCTCTGTCTTGTCCCTGGAGATGGATGGATCAGC  
 GAGGGGGCCACAGTCCAGCTGGGGCAGCAAGTACTCCCTACGGCACTTGTCTACAGGGGG  
 AAAGACCTCTGTGCTTGGCCCCGTGGGCTCACATGGCCTGTTTGCCTGTAACCCCGG  
 CTGGGATGGAACCCGACTTGGTCTCCTTTGAAAAACAGTGAAGTTTGGGCCAATCCG  
 TCCTTTAACCCTGCCTGGAACCTTTTTCTTTACGGGAATTAAGAATAAAAAGCGCTT  
 TTCTCCCGTATTCCTCCCGCAGAACTTGACCCAAGGGCCCCAGGGAGATATAATTTTT  
 TTCCATTCTGTTGCGGGCGTGGAAATTCGACCCCTTTTTTTTTT

**Restriction Sites:**

NotI-NotI

**ACCN:**

NM\_147781

**Insert Size:**

4700 bp

**OTI Disclaimer:**

Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).

**Components:**

The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

**Reconstitution Method:**

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

**RefSeq:** [NM\\_147781.2](#), [NP\\_680091.1](#)

**RefSeq Size:** 3902 bp

**RefSeq ORF:** 1020 bp

**Locus ID:** 1508

**UniProt ID:** [P07858](#)

**Cytogenetics:** 8p23.1

**Domains:** Pept\_C1

**Protein Families:** Druggable Genome, Protease

**Protein Pathways:** Antigen processing and presentation, Lysosome

**Gene Summary:** This gene encodes a member of the C1 family of peptidases. Alternative splicing of this gene results in multiple transcript variants. At least one of these variants encodes a preproprotein that is proteolytically processed to generate multiple protein products. These products include the cathepsin B light and heavy chains, which can dimerize to form the double chain form of the enzyme. This enzyme is a lysosomal cysteine protease with both endopeptidase and exopeptidase activity that may play a role in protein turnover. It is also known as amyloid precursor protein secretase and is involved in the proteolytic processing of amyloid precursor protein (APP). Incomplete proteolytic processing of APP has been suggested to be a causative factor in Alzheimer's disease, the most common cause of dementia. Overexpression of the encoded protein has been associated with esophageal adenocarcinoma and other tumors. Both Cathepsin B and Cathepsin L are involved in the cleavage of the spike protein from the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) upon its entry to the human host cell. Multiple pseudogenes of this gene have been identified. [provided by RefSeq, Sep 2020]

Transcript Variant: This variant (3) differs in the 5' UTR compared to variant 1. Variants 1-5 encode the same isoform (1). Sequence Note: This RefSeq record was created from transcript and genomic sequence data to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on transcript alignments.