



Recombinant Protein Technical Manual
Recombinant Rat Cathepsin B/CTSB Protein (His Tag)
RPES3357

Product Data:

Product SKU: RPES3357

Size: 10µg

Species: Rat

Expression host: HEK293 Cells

Uniprot: NP_072119.2

Protein Information:

Molecular Mass: 37.1 kDa

AP Molecular Mass:

Tag: C-His

Bio-activity:

Purity: > 95 % as determined by SDS-PAGE

Endotoxin: < 1.0 EU per µg protein as determined by the LAL method.

Storage: Lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.

Shipping: This product is provided as lyophilized powder which is shipped with ice packs.

Formulation: Lyophilized from sterile 25 mM Tris, 150 mM NaCl, pH 7.5

Reconstitution: Please refer to the printed manual for detailed information.

Application:

Synonyms: Cathepsin B;CTSB

Immunogen Information:

Sequence: Met1-Phe339

Background:

Cathepsin B is a papain-family cysteine protease that is normally located in lysosomes, where it is involved in the turnover of proteins and plays various roles in maintaining the normal metabolism of cells. This protease has been implicated in pathological conditions, e. g. , tumor progression and arthritis. In disease conditions, increases in the expression of cathepsin B occur at both the gene and protein levels. Cathepsin B is synthesized as a preproenzyme and the primary pathways for its normal trafficking to the lysosome utilize mannose 6-phosphate receptors (MPRs). Mature cathepsin B has the ability to degrade several extracellular matrix components at both neutral and acidic pH and has been implicated in the progression of several human and rodent tumors progression and arthritis. Cathepsin B expression is increased in many human cancers at the mRNA, protein and activity levels. It is also frequently overexpressed in premalignant lesions, an observation that associates this protease with local invasive stages of cancer. Increased expression of cathepsin B in primary cancers, and especially in preneoplastic lesions, suggests that this enzyme might have pro-apoptotic features. Active cathepsin B is also secreted from tumours, a mechanism likely to be facilitated by lysosomal exocytosis or extracellular processing by surface activators. Cathepsin B is localized to caveolae on the tumour surface, where binding to the annexin II heterotetramer occurs. Thus CTSB is suggested as a tumor marker. Additionally, Cathepsin B can degrade extracellular matrix proteins, such as collagen IV and laminin, and can activate the precursor form of urokinase plasminogen activator (uPA), perhaps thereby initiating an extracellular proteolytic cascade.