

## Carboxypeptidase B2 Protein, Rat, Recombinant (His)

### General Information

Synonyms:	carboxypeptidase B2 (plasma)
Protein Construction:	A DNA sequence encoding the rat Cpb2 (NP_446069.1) (Met1-Ser422) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Phe 22
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	Q9EQV9
Molecular Weight:	48 kDa (predicted)

### QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

**Reconstitution:**  
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

**Stability & Storage:**  
It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

**Shipping:**  
In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Carboxypeptidase B2, also known as Carboxypeptidase U, Thrombin-activable fibrinolysis inhibitor, Plasma carboxypeptidase B, CPB2, is a secreted protein which belongs to the peptidase M14 family. Carboxypeptidases are enzymes that hydrolyze C-terminal peptide bonds. The carboxypeptidase family includes metallo-, serine, and cysteine carboxypeptidases. According to their substrate specificity, these enzymes are referred to as carboxypeptidase A (cleaving aliphatic residues) or carboxypeptidase B (cleaving basic amino residues). CPB2 is

activated by thrombin and acts on carboxypeptidase B substrates. After thrombin activation, the mature protein downregulates fibrinolysis. CPB2 is synthesized by the liver and circulates in the plasma as a plasminogen-bound zymogen. When it is activated by proteolysis at residue Arg92 by the thrombin / thrombomodulin complex. CPB2 cleaves C-terminal arginine or lysine residues from biologically active peptides such as kinins or anaphylatoxins in the circulation thereby regulating their activities. CPB2 exhibits carboxypeptidase activity and activated CPB2 reduces fibrinolysis by removing the fibrin C-terminal residues that are important for the binding and activation of plasminogen.

### Reference

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