

## Meprin alpha/MEP1A Protein, Mouse, Recombinant (His)

## General Information

Synonyms:	mepirin A, alpha (PABA peptide hydrolase);AW107200;Mep-1a;AI098089;Mep1;mepirin A, $\alpha$ (PABA peptide hydrolase);Mep-1;Meprin $\alpha$ /MEP1A
Protein Construction:	A DNA sequence encoding the mouse MEP1A (NP_032611.2) (Met 1-Arg 615) was expressed, fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Cys 21
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	P28825
Molecular Weight:	69 kDa (predicted); 80-90 kDa (reducing condition, due to glycosylation)

## QC Testing

Biological Activity:	Measured by its ability to cleave a fluorogenic peptide substrate, Mca-YVADAPK(Dnp)-OH. The specific activity is >400 pmoles/min/ $\mu$ g. (Activation description: The proenzyme needs to be activated by Trypsin for an activated form)
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ $\mu$ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 $\mu$ m 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:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

## Stability &amp; 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

Meprin A subunit alpha, also known as MEP1A, and Endopeptidase-2, is a single-pass type I membrane protein that belongs to the peptidase M12A family. MEP1A contains one EGF-like domain, one MAM domain, and one MATH domain. Meprins are unique plasma membrane and secreted metalloproteinases that are highly regulated

at the transcriptional and post-translational levels. Meprin alpha and beta subunits are abundantly expressed in kidney and intestinal epithelial cells, are secreted into the urinary tract and intestinal lumen and are found in leukocytes and cancer cells under certain conditions. Meprins are capable of proteolytically degrading extracellular matrix proteins, processing bioactive proteins, and play a role in inflammatory processes. Meprin A and B are highly regulated, secreted and cell-surface homo- and hetero-oligomeric enzymes. Meprins are abundantly expressed in the kidney and intestine. The multidomain alpha and beta subunits have high sequence identity. They have very different substrate specificities, oligomerization potentials, and are differentially regulated. Meprin A appears to be an important therapeutic target and urinary excretion appears to be a potential biomarker of acute kidney injury ( AKI ).

### Reference

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Bond, JS. et al., 2005, FEBS Lett. 579 (15): 3317-22.  
Herzog, C. et al., 2007, Kidney Int. 71 (10): 1009-18.  
Yura, RE. et al., 2009, Am J Physiol Renal Physiol. 296 (1): F135-44.

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