

# Recombinant Mouse SerpinD1/HCF2 Protein (His Tag)

Catalog Number:PKSM040854



**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

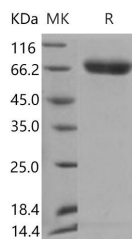
## Description

<b>Synonyms</b>	Heparin cofactor 2;Heparin cofactor II;HC-II;Protease inhibitor leuserpin-2;Serpin D1
<b>Species</b>	Mouse
<b>Expression Host</b>	HEK293 Cells
<b>Sequence</b>	Met1-Ser 478
<b>Accession</b>	NP_032249.3
<b>Calculated Molecular Weight</b>	53.5 kDa
<b>Observed molecular weight</b>	65-70 kDa
<b>Tag</b>	C-His
<b>Bioactivity</b>	Measured by its ability to inhibit thrombin (Sigma, T4648) cleavage of fluorogenic peptide substrate Boc-VPR-AMC (R&D Systems, Catslog# ES011). The IC50 value is < 1. 2 nM.

## Properties

<b>Purity</b>	> 98 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 1.0 EU per µg of the protein as determined by the LAL method.
<b>Storage</b>	Generally, 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.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from sterile 25mM HEPES, 150mM NaCl, pH 7.4 Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
<b>Reconstitution</b>	Please refer to the printed manual for detailed information.

## Data



> 98 % as determined by reducing SDS-PAGE.

## Background

SerpinD1, also known as heparin cofactor II (HCII), is a member of Serpin superfamily of the serine proteinase inhibitors. HCII is a glycoprotein in human plasma that inhibits thrombin and chymotrypsin, and the rate of inhibition of thrombin is rapidly increased by Dermatan sulfate (DS), heparin (H) and glycosaminoglycans(GAG). The stimulatory effect of glycosaminoglycans on the inhibition is mediated, in part, by the N-terminal acidic domain of HCII.

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Interestingly, a C-terminal His-tagged recombinant HCII exhibits enhanced activity of thrombin inhibition. It has been suggested that HCII plays a unique and important role in vascular homeostasis, and accordingly mutations in this gene or congenital HCII deficiency is potentially associated with thrombosis. HCII specifically inhibits thrombin action at the site of vascular wall injury and HCII-thrombin complexes have been detected in human plasma. HCII protects against thrombin-induced vascular remodeling in both humans and mice and suggest that HCII is a predictive biomarker and therapeutic target for atherosclerosis. SerpinD1 also inhibits chymotrypsin, but in a glycosaminoglycan-independent manner.

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