

## Serpin A5 Protein, Human (HEK293, His)

<b>Cat. No.:</b>	HY-P70975
<b>Synonyms:</b>	Plasma Serine Protease Inhibitor; Acrosomal Serine Protease Inhibitor; Plasminogen Activator Inhibitor 3; PAI-3; PAI3; Protein C Inhibitor; PCI; Serpin A5; SERPINA5; PCI; PLANH3; PROC1
<b>Species:</b>	Human
<b>Source:</b>	HEK293
<b>Accession:</b>	AAH08915.1 (H20-P406)
<b>Gene ID:</b>	5104
<b>Molecular Weight:</b>	44-55 kDa

### PROPERTIES

<b>AA Sequence</b>	<pre> HRHHPREMKK   RVEDLHV GAT   VAPSSRRDFT   FDLYRALASA APSQNIFFSP    VSI SMSLAML   SLGAGSSTKM   QILEGLGLNL QKSSEKELHR    GFQQLLQELN   QPRDGFQLSL   GNALFTDLVV DLQDTFVSAM    KTLYLADTFP   TNFRDSAGAM   KQINDYVAKQ TKGKIVDLLK    NLD SNAVVIM   VNYIFFKAKW   ETSFNHKG TQ EQDFYVTSET    VVRVPMSRE    DQYHYLLDRN   LSCR VVGVPY QGNATALFIL    PSEGKMQQVE   NGLSEKTLRK   WLKMFKKRQL ELYLPKFSIE    GSYQLEKVL P   SLGISNVFTS   HADLSGISNH SNIQVSEMVH    KAVVEVDES G   TRAAAATGTI   FTFRSARLNS QRLVFNRPFL    MFI VDNNIL F   LGKVNR P           </pre>
<b>Biological Activity</b>	Measured by its ability to inhibit Recombinant Human Coagulation Factor II/Thrombin cleavage of a fluorogenic peptide substrate Boc-VPR-AMC. The IC50 value is 1.91 nM.
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution of 20 mM MES, 150 mM NaCl, pH 5.5.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
<b>Storage &amp; Stability</b>	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

## Background

Plasma serine protease inhibitor (SERPINA5) is a member of the serpin family of proteins, a group of glycoproteins that inhibit serine proteases. SERPINA5 is a heparin-dependent serine protease inhibitor acting in body fluids and secretions which inactivates serine proteases by binding irreversibly to their serine activation site.

SERPINA5 is involved in the regulation of intravascular and extravascular proteolytic activities in a bimodal fashion. SERPINA5 plays hemostatic roles in the blood plasma, acts as a procoagulant and pro-inflammatory factor by inhibiting the anticoagulant activated protein C factor as well as the generation of activated protein C factor by the thrombin/thrombomodulin complex. Otherwise, SERPINA5 can act as an anticoagulant factor by inhibiting blood coagulation factors like prothrombin, factor XI, factor Xa, plasma kallikrein and fibrinolytic enzymes such as tissue- and urinary-type plasminogen activators.

In seminal plasma, SERPINA5 inactivates several serine proteases implicated in the reproductive system as SERPINA5 inhibits the serpin acrosin to indirectly protect component of the male genital tract from being degraded by excessive released acrosin; inhibits tissue- and urinary-type plasminogen activator, prostate-specific antigen and kallikrein activities; has a control on the sperm motility and fertilization; inhibits the activated protein C-catalyzed degradation of SEMG1 and SEMG2; regulates the degradation of semenogelin during the process of transfer of spermatozoa from the male reproductive tract into the female tract.

In urine, SERPINA5 inhibits urinary-type plasminogen activator and kallikrein activities. SERPINA5 inactivates membrane-anchored serine proteases activities such as MPRSS7 and TMPRSS11E; inhibits urinary-type plasminogen activator-dependent tumor cell invasion and metastasis, SERPINA5 may also play a non-inhibitory role in seminal plasma and urine as a hydrophobic hormone carrier by its binding to retinoic acid<sup>[1][2][3]</sup>.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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