

## Serpin B1 Protein, Human (HEK293, His)

<b>Cat. No.:</b>	HY-P71303
<b>Synonyms:</b>	Leukocyte elastase inhibitor; SERPINB1; Monocyte/neutrophil elastase inhibitor; M/NEI; Peptidase inhibitor 2; PI-2
<b>Species:</b>	Human
<b>Source:</b>	HEK293
<b>Accession:</b>	P30740 (M1-P379)
<b>Gene ID:</b>	1992
<b>Molecular Weight:</b>	Approximately 44.0 kDa

### PROPERTIES

<b>AA Sequence</b>	<pre> MEQLSSANTR   FALDLFLALS   ENNPAGNIFI   SPFSISSAMA MVFLGTRGNT   AAQLSKTFHF   NTVEEVHSRF   QSLNADINKR GASYILKLAN   RLYGEKTYNF   LPEFLVSTQK   TYGADLASVD FQHASEDARK   TINQWVKGQT   EGKIPELLAS   GMVDNMTKLV LVNAIYFKGN   WKDKFMKEAT   TNAPFRLNKK   DRKTVKMMYQ KKKFAYGYIE   DLKCRVLELP   YQGEELSMVI   LLPDDIEDES TGLKKIEEQL   TLEKLHEWTK   PENLDFIEVN   VSLPRFKLEE SYTLNSDLAR   LGVQDLFNSS   KADLSGMSGGA  RDIFISKIVH KSFVEEVNEEG  TEAAAATAGI   ATFCMLMPEE   NFTADHPFLF FIRHNSSGSI   LFLGRFSSP </pre>
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution of 20 mM PB, 150 mM NaCl, pH 7.4.
<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

<b>Background</b>	The Serpin B1 protein, a neutrophil serine protease inhibitor, plays a crucial role in regulating the innate immune response, inflammation, and cellular homeostasis. Acting primarily to safeguard cells from proteases released in the cytoplasm during
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stress or infection, Serpin B1 protects against potential damage caused by the potent enzymes released from granules. It effectively regulates the activity of various neutrophil proteases, including elastase, cathepsin G, proteinase-3, chymase, chymotrypsin, and kallikrein-3. Notably, Serpin B1 also serves as a potent intracellular inhibitor of GZMH, directly blocking its proteolytic activity. During inflammation, Serpin B1 limits the activity of inflammatory caspases (CASP1, CASP4, and CASP5) by suppressing their caspase-recruitment domain (CARD) oligomerization and enzymatic activation. Moreover, when secreted, Serpin B1 promotes beta-cell proliferation through its protease inhibitory function. The protein functions as a monomer and interacts with CASP1, CASP4, CASP5, PRTN3, and GZMH, revealing its intricate role in modulating various cellular processes and interactions with key proteins in the immune and inflammatory pathways.

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

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