

PIN1 Protein, Human (His)

Cat. No.:	HY-P76547
Synonyms:	Peptidyl-prolyl cis-trans isomerase NIMA-interacting 1; Rotamase Pin1; PIN1
Species:	Human
Source:	E. coli
Accession:	Q13526 (M1-E163)
Gene ID:	5300
Molecular Weight:	Approximately 19 kDa

PROPERTIES

AA Sequence	<p> M A D E E K L P P G W E K R M S R S S G R V Y Y F N H I T N A S Q W E R P S G N S S S G G K N G Q G E P A R V R C S H L L V K H S Q S R R P S S W R Q E K I T R T K E E A L E L I N G Y I Q K I K S G E E D F E S L A S Q F S D C S S A K A R G D L G A F S R G Q M Q K P F E D A S F A L R T G E M S G P V F T D S G I H I I L R T E </p>
Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from sterile 50 mM Tris-HCL, 300 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	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.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p> PIN1 Protein, a peptidyl-prolyl cis/trans isomerase (PPIase), intricately participates in multiple cellular processes by binding to and isomerizing specific phosphorylated Ser/Thr-Pro (pSer/Thr-Pro) motifs. This molecular switch induces conformational changes in phosphorylated proteins, influencing diverse cellular pathways. With a preference for acidic residues N-terminally to the proline bond, PIN1 regulates mitosis by interacting with NIMA, attenuating its mitosis-promoting activity, and down-regulating the kinase activity of BTK. It transactivates oncogenes, induces centrosome </p>
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amplification, chromosome instability, and cell transformation. Moreover, PIN1 is crucial for the dephosphorylation and recycling of RAF1, binding and targeting PML and BCL6 for degradation, and acting as a regulator of the JNK cascade by disrupting FBXW7 dimerization. PIN1's involvement extends to DNA repair processes, where it influences the balance between error-prone non-homologous end joining (NHEJ) and error-free homologous recombination (HR). During IL33-induced lung inflammation, PIN1 catalyzes cis-trans isomerization of phosphorylated IRAK3/IRAK-M, contributing to IRAK3 stabilization, nuclear translocation, and the expression of pro-inflammatory genes in dendritic cells.

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

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