

PIN1 Protein, Human

Cat. No.:	HY-P76546
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 18 kDa

PROPERTIES

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 a 0.2 μ m filtered solution of 50 mM Tris, 10% Glycerol, pH 8.0. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/ μ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μ g/mL in ddH ₂ O.
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

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 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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