

## STAT1 Protein, Human (sf9, His-GST)

<b>Cat. No.:</b>	HY-P73628
<b>Synonyms:</b>	Signal Transducer and Activator of Transcription 1-Alpha/Beta; STAT1
<b>Species:</b>	Human
<b>Source:</b>	Sf9 insect cells
<b>Accession:</b>	P42224-2 (M1-V712)
<b>Gene ID:</b>	6772
<b>Molecular Weight:</b>	Approximately 105 kDa

### PROPERTIES

<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution of 20 mM Tris, 500 mM NaCl, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
<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.
<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>	<p>STAT1 is a signal transducer and transcription activator that plays a crucial role in mediating cellular responses to interferons (IFNs), cytokine KITLG/SCF, and various growth factors. Upon binding of type I IFN (IFN-alpha and IFN-beta) to cell surface receptors, STAT1 undergoes tyrosine phosphorylation and forms a dimer with STAT2. This complex, known as ISGF3 transcription factor, translocates to the nucleus and activates the transcription of IFN-stimulated genes (ISG), establishing an antiviral state. In response to type II IFN (IFN-gamma), STAT1 is phosphorylated at both tyrosine and serine residues, forming a homodimer (GAF) that enters the nucleus and binds to the IFN-gamma activated sequence (GAS), driving the expression of target genes and inducing a cellular antiviral state. Additionally, STAT1 becomes activated in response to KITLG/SCF and KIT signaling and may mediate cellular responses to activated FGFR1, FGFR2, FGFR3, and FGFR4. Furthermore, in the small intestine, STAT1 associates with Gasdermin-D and promotes the transcription of CIITA, inducing the formation of type 1 regulatory T (Tr1) cells. STAT1 interacts with various proteins, including PIAS1, IFNAR1, IFNAR2, NMI, CREBBP/CBP, PTK2/FAK1, SRC, ERBB4, PARP9, DTX3L, EP300/p300, and IFNGR1, contributing to its diverse cellular functions.</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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