STAT1 Protein, Human

Cat. No.:	HY-P71335
Synonyms:	Signal Transducer and Activator of Transcription 1-Alpha/Beta; Transcription Factor ISGF-3 Components p91/p84; STAT1
Species:	Human
Source:	E. coli
Accession:	P42224-2 (M1-V712)
Gene ID:	6772
Molecular Weight:	Approximately 85.0 kDa

PROPERTIES

AA Sequence

M S Q W Y E L Q Q L D S K F L E Q V H Q L Y D D S F P M E I R Q Y L A Q W L E K
Q D W E H A A N D V S F A T I R F H D L L S Q L D D Q Y S R F S L E N N F L L Q
H N I R K S K R N L Q D N F Q E D P I Q M S M I I Y S C L K E E R K I L E N A Q
R F N Q A Q S G N I Q S T V M L D K Q K E L D S K V R N V K D K V M C I E H E I
K S L E D L Q D E Y D F K C K T L Q N R E H E T N G V A K S D Q K Q E Q L L L K
K M Y L M L D N K R K E V V H K I I E L L N V T E L T Q N A L I N D E L V E W K
R R Q Q S A C I G G P P N A C L D Q L Q N W F T I V A E S L Q Q V R Q Q L K K L
E E L E Q K Y T Y E H D P I T K N K Q V L W D R T F S L F Q Q L I Q S S F V V E
R Q P C M P T H P Q R P L V L K T G V Q F T V K L R L L V K L Q E L N Y N L K V
K V L F D K D V N E R N T V K G F R K F N I L G T H T K V M N M E E S T N G S L
A A E F R H L Q L K E Q K N A G T R T N E G P L I V T E E L H S L S F E T Q L C
Q P G L V I D L E T T S L P V V V I S N V S Q L P S G W A S I L W Y N M L V A E
P R N L S F F L T P P C A R W A Q L S E V L S W Q F S S V T K R G L N V D Q L N
M L G E K L L G P N A S P D G L I P W T R F C K E N I N D K N F P F W L W I E S
I L E L I K K H L L P L W N D G C I M G F I S K E R E R A L L K D Q Q P G T F L
L R F S E S S R E G A I T F T W V E R S Q N G G E P D F H A V E P Y T K K E L S
A V T F P D I I R N Y K V M A A E N I P E N P L K Y L Y P N I D K D H A F G K Y
Y S R P K E A P E P M E L D G P K G T G Y I K T E L I S V S E V

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM PB, 0.02% Tween 80, 5% Sucrose, 4% Mannitol, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. 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	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.

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