

# Active Recombinant Human STAT1

**Cat. No.** STAT1-1164H    **Lot. No.** (See product label)

## SPECIFICATION

### Product Overview

**Species** Human

**Source** Sf9 Cells

### Description

Signal transducer and activator of transcription (STAT) proteins are a family of latent cytoplasmic transcription factors involved in cytokine, hormone, and growth factor signal transduction. Seven members of the STAT family of transcription factors have been identified in mammalian cells: STAT1, STAT2, STAT3, STAT4, STAT5a, STAT5b, and STAT6. Receptor-recruited STATs are phosphorylated on a single tyrosine residue in the carboxy terminal portion. The modified STATs are released from the cytoplasmic region of the receptor subunits to form homodimers or heterodimers through reciprocal interaction between the phosphotyrosine of one STAT and the SH2 domain of another. Following dimerization, STATs rapidly translocate to the nucleus and interact with specific regulatory elements to induce target gene transcription. Recently, STAT-1 has been implicated in modulating pro- and anti-apoptotic genes following several stress-induced responses. These effects are dependent on STAT-1 phosphorylation on serine-727 and require the C-terminal transactivation domain of STAT-1 to enhance its pro-apoptotic effect or inhibit its antiapoptotic effects. The STAT-1 C-terminal domain has been demonstrated to be important for protein-protein interaction with other transcriptional activators. The reports that STAT-1-deficient mice develop spontaneous and chemically induced tumours more rapidly compared to wildtype mice and that STAT-1-deficient cells are more resistant to agents that induce apoptosis strongly support the argument that

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|                    |                                                                                                                                                                                    |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | STAT-1 acts as a tumour suppressor.                                                                                                                                                |
| <b>Application</b> | Use only for Research and not for Drug or Diagnostic purposes. STAT1 can be used for gel mobility shift assay, for protein-protein and small molecules-protein interactions assay. |
| <b>Usage</b>       | For in vitro use only.                                                                                                                                                             |
| <b>Form</b>        | Liquid. Supplied in 20 mM Tris-HCl pH 8.0, 20% glycerol, 100 mM KCl, 0.2 mM EDTA and 1 mM DTT.                                                                                     |
| <b>Activity</b>    | 1 ng is the amount sufficient for a gel mobility shift assay in a 20µl reaction, 100 ng are sufficient for a proteinprotein interaction assay detected by immuno-blot system.      |
| <b>Purity</b>      | > 95% by SDS-PAGE.                                                                                                                                                                 |
| <b>Storage</b>     | Quality guaranteed for 12 months, store at -80°C. Avoid freeze / thaw cycles.                                                                                                      |

## GENE INFORMATION

|                    |                                                                                                                                                                                                                                                                              |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gene Name</b>   | STAT1 signal transducer and activator of transcription 1, 91kDa [ Homo sapiens ]                                                                                                                                                                                             |
| <b>Synonyms</b>    | STAT1; signal transducer and activator of transcription 1, 91kDa; ISGF-3; STAT91; DKFZp686B04100; OTTHUMP00000205845; signal transducer and activator of transcription 1; signal transducer and activator of transcription-1; transcription factor ISGF-3 components p91/p84 |
| <b>Gene ID</b>     | 6772                                                                                                                                                                                                                                                                         |
| <b>mRNA Refseq</b> | NM_007315                                                                                                                                                                                                                                                                    |

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|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Protein Refseq</b>      | NP_009330                                                                                                                                                                                                               |
| <b>MIM</b>                 | 600555                                                                                                                                                                                                                  |
| <b>UniProt ID</b>          | P42224                                                                                                                                                                                                                  |
| <b>Chromosome Location</b> | 2q32.2                                                                                                                                                                                                                  |
| <b>Pathway</b>             | Chemokine signaling pathway; Jak-STAT signaling pathway; Pancreatic cancer; Toll-like receptor signaling pathway; Signaling by PDGF                                                                                     |
| <b>Function</b>            | calcium ion binding; matopoietin/interferon-class (D200-domain) cytokine receptor signal transducer activity; protein binding; sequence-specific DNA binding; signal transducer activity; transcription factor activity |

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