Technical Data Sheet

Purified Mouse Anti-Stat1

Product Information

Material Number:	**610116**
Size:	150 µg
Concentration:	250 µg/ml
Clone:	1/Stat1
Immunogen:	Human Stat1 aa. 1-194
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Human Tested in Development: Chicken, Dog, Frog, Mouse, Rat
Target MW:	91/84 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

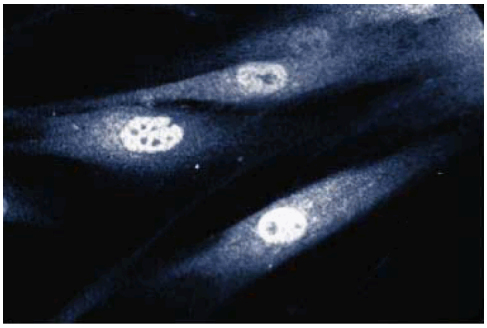
Description

Stat (**S**ignal **t**ransducer and **a**ctivators of **t**ranscription) proteins are critical mediators of the biologic activity of cytokines, including interleukins, interferons, erythropoietin, and growth factors. Ligand-receptor interaction leads to activation of constitutively associated JAK family kinases and subsequent recruitment/activation of Stat proteins by tyrosine phosphorylation. Active Stat proteins then move to the nucleus to promote transcription of cytokine-inducible genes. Seven Stat proteins have been cloned, each of which is differentially expressed and/or activated in a cytokine-specific and cell type-specific manner. Stat1 and Stat2 are components of the ISGF3 (**I**nterferon-**S**timulated **G**ene **F**actor **3**) complex, which is the primary transcription activator induced by the binding of the interferon to a specific cell-surface receptor. Stat1 has two alternatively spliced isoforms, 91-kDa Stat1α and 84 kDa Stat1β; Stat1α has 38 additional C-terminal amino acids. In response to the binding of IFNα, IFNγ, EGF, PDGF, or CSF-1 to their respective receptors, the Stat1 subunits become tyrosine-phosphorylated at Y701, and the complex is translocated to the nucleus. This results in the formation of an active complex that includes the DNA-binding p48 subunit. This complex is responsible for modulating the transcription of the interferon-stimulated genes (ISGs). Thus, phosphorylation of Y701 in Stat1 occurs in response to growth factors and cytokines, and is essential for normal transcriptional activity of the ISGF3 complex.

The 1/Stat1 monoclonal antibody recognizes the N-terminus of human Stat1 (both isoforms), regardless of phosphorylation status.

This antibody is routinely tested by western blot analysis. Other applications were tested at BD Biosciences Pharmingen during antibody development only or reported in the literature.

Western blot analysis of Stat1 on a A431 cell lysate. *Lane 1: 1:250, lane 2: 1:500, lane 3: 1:1000 dilution of the anti- Stat1 antibody.*



Immunofluorescent staining of human fibroblast cells.

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Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
Store undiluted at -20° C.

Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development
Immunohistochemistry	Tested During Development
Immunoprecipitation	Tested During Development

Suggested Companion Products

Catalog Number	Name	Size	Clone
611447	A431 Cell Lysate	500 µg	(none)
554002	HRP Goat Anti-Mouse Igs	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Igs	0.5 mg	Polyclonal

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

References

Doan TN, Ali MS, Bernstein KE. Tyrosine kinase activation by the angiotensin II receptor in the absence of calcium signaling. *J Biol Chem.* 2001; 276(24):20954-20958.(Clone-specific: Immunoprecipitation, Western blot)

Dumoutier L, Louahed J, Renauld JC. Cloning and characterization of IL-10-related T cell-derived inducible factor (IL-TIF), a novel cytokine structurally related to IL-10 and inducible by IL-9. *J Immunol.* 2000; 164(4):1814-1819.(Clone-specific: Gel shift)

Dupuis S, Dargemont C, Fieschi C, et al. Impairment of mycobacterial but not viral immunity by a germline human STAT1 mutation. *Science.* 2001; 293(5528):300-303.(Clone-specific: Immunohistochemistry, Immunoprecipitation, Western blot)

Fu XY, Schindler C, Improta T, Aebersold R, Darnell JE Jr. The proteins of ISGF-3, the interferon alpha-induced transcriptional activator, define a gene family involved in signal transduction. *Proc Natl Acad Sci U S A.* 1992; 89(16):7840-7843.(Biology)

Sadowski HB, Shuai K, Darnell JE Jr, Gilman MZ. A common nuclear signal transduction pathway activated by growth factor and cytokine receptors. *Science.* 1993; 261(5129):1739-1744.(Biology)