Technical Data Sheet

Purified Mouse Anti-Stat1 (pY701)

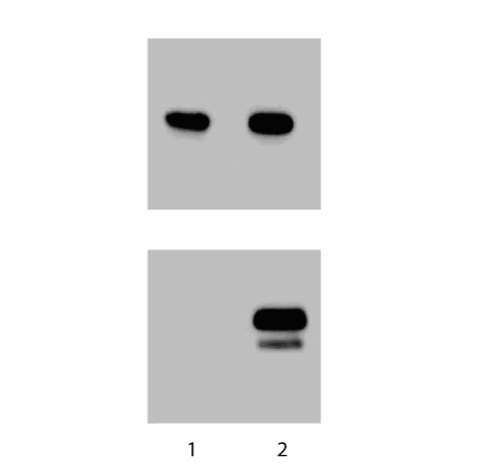
Product Information

Material Number:	**612232**
Size:	50 µg
Concentration:	250 µg/ml
Clone:	4a
Immunogen:	Phosphorylated Human Stat1 Peptide
Isotype:	Mouse IgG2a
Reactivity:	QC Testing: Human Tested in Development: Mouse
Target MW:	84/91 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

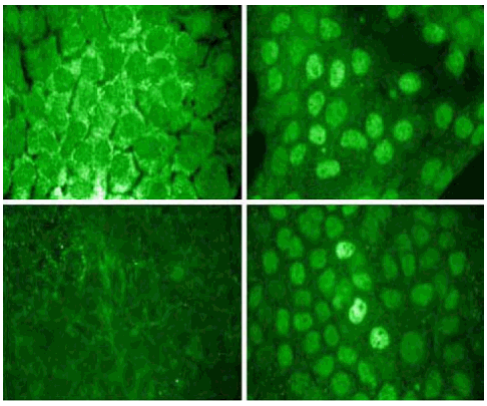
Description

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).

The 4a monoclonal antibody recognizes the phosphorylated Y701 in Stat1α and Stat1β.



A431 cells were either left untreated (left lane) or treated (right lane) with 100 ng/ml EGF for 5 minutes at 37°C. *The top panel was probed with Stat1 (Cat. No. 610115) and the bottom was probed with Stat1 (pY701) (Cat. No. 612232).*



A431 cells were serum starved and treated with EGF (100 ng/ml) for 5 minutes, then fixed in 3.75% paraformaldehyde with 0.2% Triton X-100. *Immunofluorescent staining was performed with Stat1 (Cat. No. 610115) and Stat1 (pY701) (Cat. No. 612232).*

Preparation and Storage

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

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Application Notes

Application

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

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

Darnell JE Jr. STATs and gene regulation. *Science.* 1997; 277(5332):1630-1635.(Biology)
Fu XY, Zhang JJ. Transcription factor p91 interacts with the epidermal growth factor receptor and mediates activation of the c-fos gene promoter. *Cell.* 1993; 74(6):1135-1145.(Biology)