Datasheet for ABIN349594

anti-STAT2 antibody (Internal Region, pTyr690)

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Overview

Quantity:	100 µg
Target:	STAT2
Binding Specificity:	Internal Region, pTyr690
Reactivity:	Human, Mouse, Rat, Cow, Dog, Horse, Macaque, Pig, Vervet Monkey, Chimpanzee
Host:	Rabbit
Clonality:	Polyclonal
Conjugate:	This STAT2 antibody is un-conjugated
Application:	Western Blotting (WB), ELISA

Product Details

Immunogen:	This affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to a region near the N-terminus of human STAT2 protein. Immunogen Type: Peptide
Isotype:	IgG
Specificity:	This affinity purified antibody is directed against human STAT2 pY690 protein. The product was affinity purified from monospecific antiserum by immunoaffinity chromatography. A BLAST analysis was used to suggest cross-reactivity with STAT2 pY690 protein from human, rat (73%) and mouse (76%), sources based on homology with the immunizing sequence. Reactivity against homologues from other sources is not known.
Cross-Reactivity:	Chimpanzee, Macaque, Vervet Monkey (Chlorocebus pygerythrus), Rat (Rattus), Dog (Canine),

Product Details

	Pig (Porcine), Horse (Equine), Mouse (Murine), Sheep (Ovine)
Characteristics:	This antibody is designed, produced, and validated as part of a collaboration with the National Cancer Institute (NCI) and is suitable for Cancer, Immunology and Nuclear Signaling research. STAT2 is a member of the STAT family of transcription factors. Unlike other STATs, STAT2 is unique as it can only be activated by interferons (IFNs). STAT2 is a critical component in mediating many IFN-stimulated biological activities including antiproliferation and antiviral responses. Upon IFN treatment, STAT1 and STAT2 become tyrosine phosphorylated, assemble as heterodimers that bind IRF9 to form the ISGF3 complex. This complex translocates to the nucleus, binds to promoters of IFN-stimulated genes and mediates gene transcription. Consequently, mutations in STAT2 or loss of STAT2 expression leads to impairment in IFN signal transduction and gene activation. IFN-alpha is an approved drug for the treatment of several forms of cancer. Yet only a subset of patients who receive IFN-alpha therapy benefit from the treatment. Given that STAT2 is activated by IFNs, it is important to define if the reduced or lack of antitumor effects seen in cancer patients on IFN therapy is due to in defects in STAT2 function. Our goal is to identify regions/motifs within the structural domains of STAT2 that not only are essential for the tyrosine phosphorylation of STAT2, but also regulate the antitumor effects of IFN-alpha. Collectively, the results of our studies will emphasize the physiological role of STAT2 in cancer. From a clinical viewpoint, cancer patients who may benefit the most from receiving IFN-alpha therapy can be selected based on their STAT2 function.

Target Details

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Alternative Name:	STAT2 (STAT2 Products)
Background:	This antibody is designed, produced, and is suitable for Cancer, Immunology and Nuclear Signaling research. STAT2 is a member of the STAT family of transcription factors. Unlike other STATs, STAT2 is unique as it can only be activated by interferons (IFNs). STAT2 is a critical component in mediating many IFN-stimulated biological activities including antiproliferation and antiviral responses. Upon IFN treatment, STAT1 and STAT2 become tyrosine phosphorylated, assemble as heterodimers that bind IRF9 to form the ISGF3 complex. This complex translocates to the nucleus, binds to promoters of IFN-stimulated genes and mediates gene transcription. Consequently, mutations in STAT2 or loss of STAT2 expression leads to impairment in IFN signal transduction and gene activation. IFN-alpha is an approved drug for the treatment of several forms of cancer. Yet only a subset of patients who receive

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Gene ID:	6773, 4885615
UniProt:	P52630
Pathways:	JAK-STAT Signaling, Hepatitis C, CXCR4-mediated Signaling Events

Application Details

Application Notes:	This affinity purified antibody has been tested for use in ELISA and western blotting. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 113 kDa in size corresponding to STAT2 pY690 protein by western blotting in the appropriate cell lysate or extract.
Comment:	Gene Name: STAT2
Restrictions:	For Research Use only

Handling

Format:	Liquid
Concentration:	1.15 mg/mL
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	Sodium azide
Precaution of Use:	This product contains sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.
Storage:	4 °C/-20 °C

Handling

Storage Comment:	Store vial at 4 °C prior to restoration. For extended storage aliquot contents and freeze at -20 °C or below. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4 °C as an undiluted liquid. Dilute only prior to immediate use. Expiration date is three (3) months from date of opening.
Expiry Date:	3 months

Publications

Product cited in:

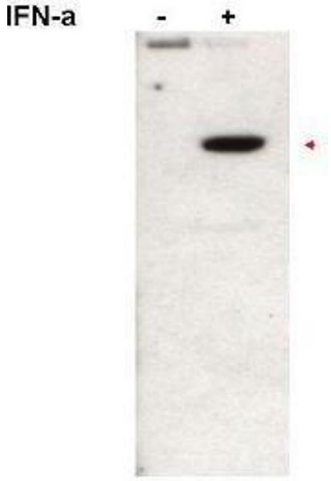
Mochimaru, Usui, Yaguchi, Nagahama, Hasegawa, Usui, Shimmura, Tsubota, Amano, Kawakami, Ishida: "Suppression of alkali burn-induced corneal neovascularization by dendritic cell vaccination targeting VEGF receptor 2." in: **Investigative ophthalmology & visual science**, Vol. 49, Issue 5, pp. 2172-7, (2008) (PubMed).

Bouwer, Alberti-Segui, Montfort, Berkowitz, Higgins: "Directed antigen delivery as a vaccine strategy for an intracellular bacterial pathogen." in: **Proceedings of the National Academy of Sciences of the United States of America**, Vol. 103, Issue 13, pp. 5102-7, (2006) (PubMed).

Kamimura, Sawa, Sato, Agung, Hirano, Murakami: "IL-2 in vivo activities and antitumor efficacy enhanced by an anti-IL-2 mAb." in: **Journal of immunology (Baltimore, Md. : 1950)**, Vol. 177, Issue 1, pp. 306-14, (2006) (PubMed).

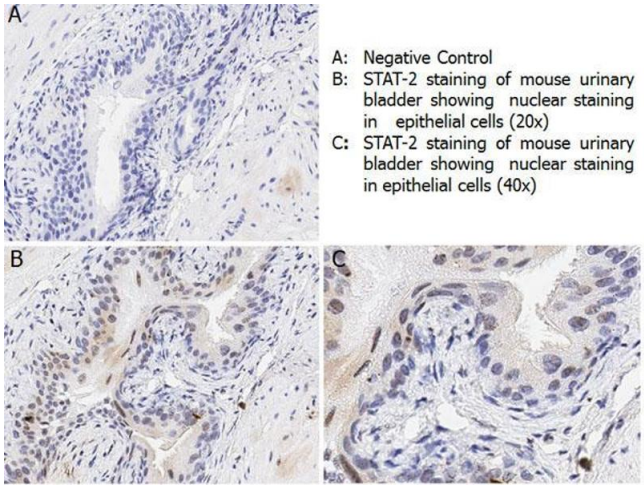
Ko, Ko, Chang, Park, Kweon, Kang: "alpha-Galactosylceramide can act as a nasal vaccine adjuvant inducing protective immune responses against viral infection and tumor." in: **Journal of immunology (Baltimore, Md. : 1950)**, Vol. 175, Issue 5, pp. 3309-17, (2005) (PubMed).

Hata, Sakaguchi, Yoshitomi, Iwakura, Sekikawa, Azuma, Kanai, Moriizumi, Nomura, Nakamura, Sakaguchi: "Distinct contribution of IL-6, TNF-alpha, IL-1, and IL-10 to T cell-mediated spontaneous autoimmune arthritis in mice." in: **The Journal of clinical investigation**, Vol. 114, Issue 4, pp. 582-8, (2004) (PubMed).



Western Blotting

Image 1. Western blot using affinity purified anti-Stat2pY690 antibody shows detection of Stat2pY690 protein (arrowhead) in Jurkat cells without (left lane) and with (right lane) 1000U/mL of IFN-a for 15 min at 37oC. Primary antibody was used at 1:1,000. Personal Communication, A.Gamero, NCI, Bethesda, MD.



Immunohistochemistry

Image 2. Immunohistochemistry with anti-STAT2 pY690 antibody showing nuclear positivity in epithelial cells of mouse urinary bladder tissue at 20x and 40x (B & C). Staining was performed on Leica Bond system using the standard protocol. Formalin fixed/paraffin embedded tissue sections were subjected to antigen retrieval and then incubated with rabbit anti-STAT2 pY690 antibody 600-401-A93 at 1:100 dilution for 60 minutes. Biotinylated Anti-rabbit secondary antibody was used at 1:200 dilution to detect primary antibody. The reaction was developed using streptavidin-HRP conjugated compact polymer system and visualized with chromogen substrate, 3'3-diamino-benzidine substrate (DAB). The sections were then counterstained with hematoxylin to detect cell nuclei.

