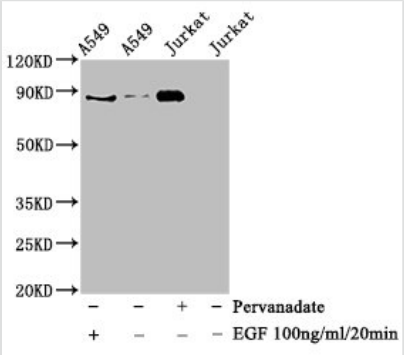
Phospho-STAT3 (Tyr705) Recombinant Monoclonal Antibody

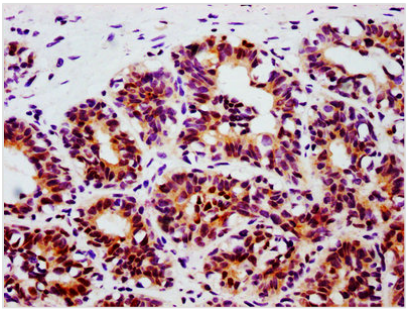
Product Code	CSB-RA022812A705phHU
Abbreviation	Signal transducer and activator of transcription 3
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P40763
Immunogen	A synthesized peptide derived from Human Phospho-STAT3 (Tyr705)
Species Reactivity	Human
Tested Applications	ELISA, WB, IHC; Recommended dilution: WB:1:500-1:5000, IHC:1:50-1:200
Relevance	Signal transducer and transcription activator that mediates cellular responses to interleukins, KITLG/SCF, LEP and other growth factors (PubMed:10688651, PubMed:12359225, PubMed:12873986, PubMed:15194700, PubMed:17344214, PubMed:18242580, PubMed:23084476). Once activated, recruits coactivators, such as NCOA1 or MED1, to the promoter region of the target gene (PubMed:17344214). May mediate cellular responses to activated FGFR1, FGFR2, FGFR3 and FGFR4 (PubMed:12873986). Binds to the interleukin-6 (IL-6)-responsive elements identified in the promoters of various acute-phase protein genes (PubMed:12359225). Activated by IL31 through IL31RA (PubMed:15194700). Acts as a regulator of inflammatory response by regulating differentiation of naive CD4(+) T-cells into T-helper Th17 or regulatory T-cells (Treg): deacetylation and oxidation of lysine residues by LOXL3, leads to disrupt STAT3 dimerization and inhibit its transcription activity (PubMed:28065600). Involved in cell cycle regulation by inducing the expression of key genes for the progression from G1 to S phase, such as CCND1 (PubMed:17344214). Mediates the effects of LEP on melanocortin production, body energy homeostasis and lactation (By similarity). May play an apoptotic role by transctivating BIRC5 expression under LEP activation (PubMed:18242580). Cytoplasmic STAT3 represses macroautophagy by inhibiting EIF2AK2/PKR activity (PubMed:23084476). Plays a crucial role in basal beta cell functions, such as regulation of insulin secretion (By similarity).
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Alias	Signal transducer and activator of transcription 3, Acute-phase response factor, STAT3

Immunogen Species	Homo sapiens (Human)
Research Area	Signal Transduction
Gene Names	STAT3
Clone No.	3D11

Image



Western Blot
Positive WB detected in A549 whole cell lysate,Jurkat whole cell lysate(treated with EGF or Pervanadate)
All lanes Phospho-STAT3 antibody at 0.925µg/ml
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 88 KDa
Observed band size: 88 KDa



IHC image of CSB-RA022812A705phHU diluted at 1:100 and staining in paraffin-embedded human breast cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a biotinylated secondary antibody and visualized using an HRP conjugated SP system.

Description

In the development of the phospho-STAT3 (Tyr705) recombinant monoclonal antibody, the process kicks off with the retrieval of genes responsible for encoding this antibody from rabbits that have undergone immunization with a synthesized peptide derived from the human STAT3 protein phosphorylated at Tyr705. These antibody genes are subsequently cloned into specialized expression vectors. Following this genetic modification, the vectors are introduced into host suspension cells, which are carefully cultivated to stimulate the production and secretion of antibodies. Subsequently, the phospho-STAT3 (Tyr705) recombinant monoclonal antibody is subjected to a meticulous purification process utilizing affinity chromatography techniques, effectively isolating the antibody from the surrounding cell culture supernatant. Lastly, the functionality of the antibody is comprehensively evaluated through a diverse array of assays, including ELISA, WB, and IHC tests, unequivocally confirming its capacity to interact with the human STAT3 protein phosphorylated at Tyr705.

Phosphorylation of STAT3 at Tyr705 is a crucial regulatory event that controls its transcriptional activity and influences various cellular processes, including immune responses and cell fate decisions. Dysregulation of this phosphorylation event can have significant implications in cancer, inflammation, and other diseases.