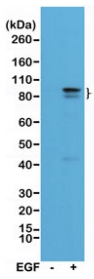
Recombinant phospho-Stat3 Antibody (Tyr705) [clone RM261] (R20279)

Catalog No.	Formulation	Size
R20279-0.1ML	Antibody in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ul

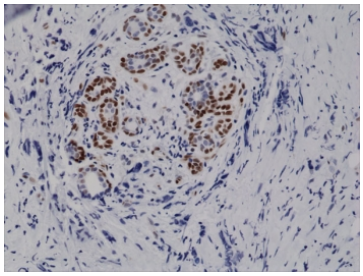
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Predicted Reactivity	Mouse, Rat
Format	Purified
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM261
Purity	Protein A purified from animal origin-free supernatant
UniProt	P40763
Gene ID	6774
Applications	Immunohistochemistry (FFPE) : 1:1000-1:10;000 (1) Western Blot : 1:1000-1:2000
Limitations	This recombinant phospho-Stat3 antibody is available for research use only.



Western blot of A431 cell lysate, untreated (-) or treated (+) with EGF, using recombinant phospho-Stat3 antibody at 1:1000.



IHC testing of FFPE human breast cancer tissue with recombinant phospho-Stat3 antibody at 1:10,000.

Description

The Recombinant phospho-STAT3 antibody is a recombinant reagent engineered to specifically detect STAT3 when phosphorylated at tyrosine 705 (pTyr705). Signal transducer and activator of transcription 3 (STAT3) is a transcription factor that mediates cellular responses to cytokines and growth factors. Upon activation by upstream kinases such as Janus kinases (JAKs), STAT3 is phosphorylated at Tyr705, leading to dimerization, nuclear translocation, and transcriptional activation of genes involved in survival, proliferation, and inflammation. The Recombinant phospho-STAT3 antibody provides precise recognition of this activated form, enabling researchers to measure STAT3 signaling dynamics with accuracy.

STAT3 is encoded by the STAT3 gene located on chromosome 17q21. Structurally, it contains an N-terminal oligomerization domain, a DNA-binding domain, a linker, an SH2 domain, and a C-terminal transactivation domain. Phosphorylation of Tyr705 within the SH2 domain promotes dimerization with another STAT3 molecule, a prerequisite for DNA binding and transcriptional activity. Once in the nucleus, STAT3 regulates a broad range of target genes controlling angiogenesis, immune responses, and cell cycle progression. By specifically detecting phosphorylation at Tyr705, the Recombinant phospho-STAT3 antibody distinguishes activated STAT3 from its inactive pool.

In western blotting, the Recombinant phospho-STAT3 antibody identifies pTyr705-STAT3 as an inducible band that increases upon cytokine or growth factor stimulation. In immunofluorescence, it highlights nuclear localization of activated STAT3, reflecting its transcriptional activity. In immunohistochemistry, the antibody reveals phosphorylated STAT3 in tissues where cytokine signaling is active, such as tumors or inflamed sites. Recombinant production ensures batch-to-batch reproducibility, providing reliability for longitudinal and comparative studies.

Aberrant STAT3 activation is a hallmark of many human cancers, including breast, prostate, and lung cancers, where it promotes tumor cell survival, angiogenesis, and immune evasion. It also plays a role in chronic inflammatory and autoimmune diseases, linking cytokine signaling to pathogenic immune responses. By enabling detection of activated STAT3, the Recombinant phospho-STAT3 antibody supports both basic studies of JAK/STAT signaling and translational efforts to evaluate STAT3 as a therapeutic target. Synonym phrases such as recombinant pTyr705-STAT3 antibody, recombinant phospho-STAT3 Tyr705 antibody, and recombinant activated STAT3 antibody improve accessibility for users across disciplines.

By delivering validated and reproducible detection, the Recombinant phospho-STAT3 antibody provides an indispensable tool for exploring cytokine signaling, oncogenesis, and immune regulation. NSJ Bioreagents ensures rigorous quality control, giving scientists confidence in its application across western blotting, immunofluorescence, and immunohistochemistry. With specificity for Tyr705 phosphorylation, the Recombinant phospho-STAT3 antibody is essential for dissecting STAT3-dependent signaling networks in health and disease.

This recombinant phospho-Stat3 antibody reacts to human Stat3 only when phosphorylated at Tyr705. There is no cross-reactivity to Stat3 without phosphorylation at Tyr705. It may also react to mouse or rat phospho-Stat3 (Tyr705), as predicted by immunogen homology.

Application Notes

The stated application concentrations are suggested starting points. Titration of the recombinant phospho-Stat3 antibody may be required due to differences in protocols and secondary/substrate sensitivity.

1. A pH6 Citrate buffer or pH9 Tris/EDTA buffer HIER step is recommended for testing of FFPE tissue sections.

Immunogen

A phospho-peptide corresponding to human phospho-Stat3 (Tyr705) was used as the immunogen for this recombinant phospho-Stat3 antibody.

Storage

Store the recombinant phospho-Stat3 antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).