

# PRODUCT INFORMATION

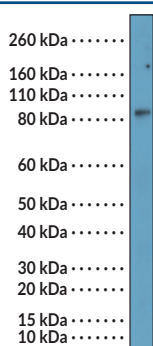


## STAT3 $\alpha/\beta$ (N-Term) Rabbit Monoclonal Antibody (Clone RM465) Item No. 35812

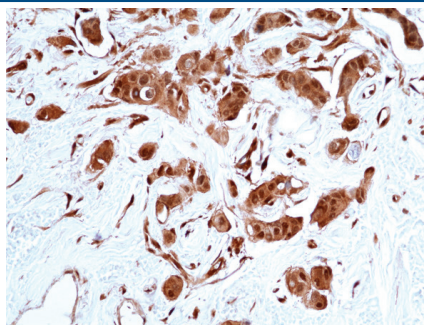
### Overview and Properties

<b>Contents:</b>	This vial contains 100 $\mu$ l of protein A-affinity purified monoclonal antibody.
<b>Synonym:</b>	Signal Transducer and Activator of Transcription 3
<b>Immunogen:</b>	Peptide from the N-terminal region of human STAT3 $\alpha/\beta$
<b>Cross Reactivity:</b>	(+) STAT3 $\alpha$ , STAT3 $\beta$
<b>Species Reactivity:</b>	(+) Human
<b>Form:</b>	Liquid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	$\geq$ 1 year
<b>Storage Buffer:</b>	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
<b>Clone:</b>	RM465
<b>Host:</b>	Rabbit
<b>Isotype:</b>	IgG
<b>Applications:</b>	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:50-1:200 for IHC and 1:1,000-1:2,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

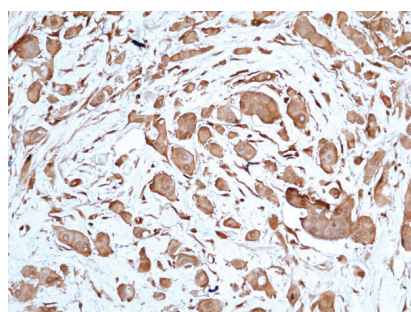
### Images



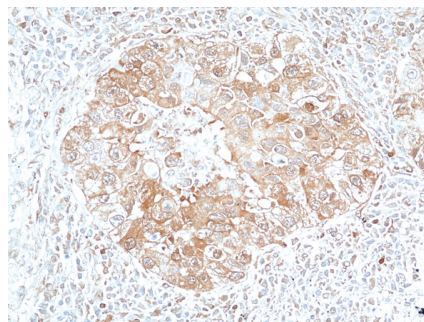
WB of HeLa lysate using STAT3  $\alpha/\beta$  (N-Term) Rabbit Monoclonal Antibody (Clone RM465) at a dilution of 1:1,000.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human breast cancer tissue using STAT3 $\alpha/\beta$  (N-Term) Rabbit Monoclonal Antibody (Clone RM465) at a 1:200 dilution.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human breast cancer tissue using STAT3 $\alpha/\beta$  (N-Term) Rabbit Monoclonal Antibody (Clone RM465) at a 1:50 dilution.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human lung cancer tissue using STAT3 $\alpha/\beta$  (N-Term) Rabbit Monoclonal Antibody (Clone RM465) at a 1:50 dilution.

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
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## Description

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STAT3 is a ubiquitously expressed transcription factor and member of the STAT protein family that has roles in a variety of cellular functions including proliferation, apoptosis, and differentiation, as well as innate and adaptive immunity and stem cell pluripotency.<sup>1-3</sup> It contains N-terminal, coiled-coil, DNA binding, and linker domains that mediate nuclear translocation and export, as well as Src homology 2 (SH2) and C-terminal transactivation domains that are subject to phosphorylation.<sup>4,5</sup> Alternative splicing of STAT3 pre-mRNA leads to the formation of the full-length isoform STAT3 $\alpha$ , as well as STAT3 $\beta$ , a truncated isoform that lacks a portion of the transactivation domain and is considered a dominant-negative regulator of STAT3 transcriptional activation.<sup>6</sup> STAT3 signaling is inhibited by the negative regulator suppressor of cytokine signaling 3 (SOCS-3) and prevents excessive STAT3 activation.<sup>2</sup> Phosphorylation of STAT3 at tyrosine 705 (Tyr<sup>705</sup>) is mediated by JAKs in response to stimulation with cytokines or growth factors and induces STAT3 dimerization and nuclear translocation, leading to STAT3-dependent gene transcription.<sup>1,2</sup> Cayman's STAT3 $\alpha/\beta$  Rabbit Monoclonal Antibody (Clone RM465) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

## References

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1. Forbes, L.R., Milner, J., and Haddad, E. Signal transducer and activator of transcription 3: A year in review. *Curr. Opin. Hematol.* **23(1)**, 23-27 (2016).
2. Lau, Y.-T.K., Ramaiyer, M., Johnson, D.E., *et al.* Targeting STAT3 in cancer with nucleotide therapeutics. *Cancers* **11(11)**, 1681 (2019).
3. Raz, R., Lee, C.-K., Cannizzaro, L.A., *et al.* Essential role of STAT3 for embryonic stem cell pluripotency. *Proc. Natl. Acad. Sci. USA* **96(6)**, 2846-2851 (1999).
4. Dumoutier, L., de Meester, C., Tavernier, J., *et al.* New activation modus of STAT3: A tyrosine-less region of the interleukin-22 receptor recruits STAT3 by interacting with its coiled-coil domain. *J. Biol. Chem.* **284(39)**, 26377-26384 (2009).
5. Sgrignani, J., Garofalo, M., Matkovic, M., *et al.* Structural biology of STAT3 and its implications for anticancer therapies development. *Int. J. Mol. Sci.* **19(6)**, 1591 (2018).
6. Maritano, D., Sugrue, M.L., Tininini, S., *et al.* The STAT3 isoforms  $\alpha$  and  $\beta$  have unique and specific functions. *Nat. Immunol.* **5(4)**, 401-409 (2004).