


Cell Signaling
TECHNOLOGY®

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Applications: FC-FP	Reactivity: H M R Mk	Sensitivity: Endogenous	Source/Isotype: Rabbit IgG	UniProt ID: #P40763	Entrez-Gene Id: 6774
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Product Usage Information	Application Flow Cytometry (Fixed/Permeabilized)	Dilution 1:50
Storage	Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.	
Specificity / Sensitivity	Phospho-Stat3 (Tyr705) (D3A7) XP® Rabbit mAb (Alexa Fluor® 647 Conjugate) detects endogenous levels of Stat3 only when phosphorylated at Tyr705. This antibody does not cross-react with phospho-EGFR or with corresponding phospho-tyrosines of other Stat proteins.	
Species predicted to react based on 100% sequence homology:	Hamster, Bovine, Pig, Horse	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr705 of mouse Stat3. The antibody was conjugated to Alexa Fluor® 647 under optimal conditions with an F/P ratio of 2-6. The Alexa Fluor® 647 dye is maximally excited by red light (e.g. 633 nm He-Ne laser). Antibody conjugates of the Alexa Fluor® 647 dye produce bright far-red-fluorescence emission with a peak at 665 nm.	
Product Description	This Cell Signaling Technology antibody is conjugated to Alexa Fluor® 647 fluorescent dye and tested in-house for direct flow cytometric analysis of human cells. The unconjugated Phospho-Stat3 (Tyr705) (D3A7) XP® Rabbit mAb #9145 reacts with Phospho-Stat3 (Tyr705) from human, mouse and rat. CST expects that Phospho-Stat3 (Tyr705) (D3A7) XP® Rabbit mAb (Alexa Fluor® 647 Conjugate) will also recognize Phospho-Stat3 in these species.	
Background	The Stat3 transcription factor is an important signaling molecule for many cytokines and growth factor receptors (1) and is required for murine fetal development (2). Research studies have shown that Stat3 is constitutively activated in a number of human tumors (3,4) and possesses oncogenic potential (5) and anti-apoptotic activities (3). Stat3 is activated by phosphorylation at Tyr705, which induces dimerization, nuclear translocation, and DNA binding (6,7). Transcriptional activation seems to be regulated by phosphorylation at Ser727 through the MAPK or mTOR pathways (8,9). Stat3 isoform expression appears to reflect biological function as the relative expression levels of Stat3α (86 kDa) and Stat3β (79 kDa) depend on cell type, ligand exposure, or cell maturation stage (10). It is notable that Stat3β lacks the serine phosphorylation site within the carboxy-terminal transcriptional activation domain (8).	
Background References	<ol style="list-style-type: none"> Heim, M.H. (2001) <i>J Recept Signal Transduct Res</i> 19, 75-120. Takeda, K. et al. (1997) <i>Proc Natl Acad Sci U S A</i> 94, 3801-4. Catlett-Falcone, R. et al. (1999) <i>Immunity</i> 10, 105-15. Garcia, R. and Jove, R. (1998) <i>J Biomed Sci</i> 5, 79-85. Bromberg, J.F. et al. (1999) <i>Cell</i> 98, 295-303. Darnell, J.E. et al. (1994) <i>Science</i> 264, 1415-21. Ihle, J.N. (1995) <i>Nature</i> 377, 591-4. Wen, Z. et al. (1995) <i>Cell</i> 82, 241-50. Yokogami, K. et al. (2000) <i>Curr Biol</i> 10, 47-50. Biethahn, S. et al. (1999) <i>Exp Hematol</i> 27, 885-94. 	

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Applications Key

FC-FP: Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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