Revision 3

Store at -20C

#5431

Phospho-SHP-2 (Tyr580) (D66F10) Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, FC-FP	M R	Endogenous	72	Rabbit IgG	#Q06124	5781

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200
Flow Cytometry (Fixed/Permeabilized)	1:200

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #91567.

Specificity/Sensitivity

Phospho-SHP-2 (Tyr580) (D66F10) Rabbit mAb detects endogenous level of SHP2 only when phosphorylated at Tyr580.

Species predicted to react based on 100% sequence homology

Human

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr580 of human SHP2 protein.

Background

SHP-2 (PTPN11) is a ubiquitously expressed, nonreceptor protein tyrosine phosphatase (PTP). It participates in signaling events downstream of receptors for growth factors, cytokines, hormones, antigens, and extracellular matrices in the control of cell growth, differentiation, migration, and death (1). Activation of SHP-2 and its association with Gab1 is critical for sustained Erk activation downstream of several growth factor receptors and cytokines (2). In addition to its role in Gab1-mediated Erk activation, SHP-2 attenuates EGF-dependent PI3 kinase activation by dephosphorylating Gab1 at p85 binding sites (3). SHP-2 becomes phosphorylated at Tyr542 and Tyr580 in its carboxy terminus in response to growth factor receptor activation (4). These phosphorylation events are thought to relieve basal inhibition and stimulate SHP-2 tyrosine phosphatase activity (5). Mutations in the corresponding gene result in a pair of clinically similar disorders (Noonan syndrome and LEOPARD syndrome) that may result from abnormal MAPK regulation (6).

Background References

1. Qu, C.K. (2000) *Cell Res* 10, 279-88.
2. Maroun, C.R. et al. (2000) *Mol Cell Biol* 20, 8513-25.
3. Zhang, S.Q. et al. (2002) *Mol Cell Biol* 22, 4062-72.
4. Bennett, A.M. et al. (1994) *Proc Natl Acad Sci USA* 91, 7335-9.
5. Lu, W. et al. (2001) *Mol Cell* 8, 759-69.
6. Edouard, T. et al. (2007) *Cell Mol Life Sci* 64, 1585-90.

Species Reactivity

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

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

M: Mouse **R:** Rat

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Limited Uses

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