

SH2B1 Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP59035

Product Information

Application	IHC-P, IHC-F, IF, E
Primary Accession	Q9NRF2
Reactivity	Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	79366
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human SH2B1
Epitope Specificity	451-560/756
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Cytoplasm. Membrane. Nucleus. Shuttles between the nucleus and the cytoplasm.
SIMILARITY	Belongs to the SH2B adapter family.Contains 1 PH domain.Contains 1 SH2 domain.
SUBUNIT	Self-associates. Homopentamer. Forms a heteromultimeric complex with SH2B2. Interacts with SH2B2. Isoform 1 interacts via its SH2 domain with JAK2. Isoform 2 interacts via its SH2 domain and its N-terminus with JAK2; the SH2 domain is required for the major interaction with JAK2 phosphorylated on tyrosine residues; the N-terminus provides a low-affinity binding to JAK2 independent of JAK2 phosphorylation. Isoform 3 interacts via its SH2 domain with JAK2. Isoform 1 interacts via its SH2 domain with INSR; the interaction requires receptor activation. Isoform 3 interacts via its SH2 domain with INSR; the interaction requires receptor activation and requires INSR phosphorylation at 'Tyr-1185'. Isoform 1 interacts with IGF1R; the interaction requires receptor activation. Isoform 2 interacts with PRKAR1A/RET (PTC2) fusion protein; the interaction requires RET 'Tyr-905' and Tyr-981'. Isoform 2 interacts via its SH2 domain with FGFR3; the interaction requires FGFR3 'Tyr-724' and 'Tyr-760'. Isoform 2 interacts with RET; the interaction requires RET kinase activity and RET 'Tyr-981'. Isoform 2 interacts with RAC1. Isoform 2 interacts with PDGFRA and/or PDGFRB; the interaction requires receptor activation. Interacts with ISR1 and ISR2. Isoform 3 is probably part of a complex consisting of INSR, ISR1 and SH2B1. Probably part of a ternary complex consisting of SH2B1, JAK2 and ISR1 or ISR2. May interact with FCER1G. Interacts (via SH2 domain) with NTRK1 (phosphorylated).
Post-translational modifications	Phosphorylated on tyrosine residues in response to receptor kinase stimulation. Phosphorylated by RET.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Adapter protein for several members of the tyrosine kinase receptor family. Involved in multiple signaling pathways mediated by Janus kinase (JAK) and receptor tyrosine kinases, including the receptors of insulin (INS), insulin-like

growth factor I (IGF1), nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), glial cell line-derived neurotrophic factor (GDNF), platelet-derived growth factor (PDGF) and fibroblast growth factors (FGFs). In growth hormone (GH) signaling, autophosphorylated ('Tyr-813') JAK2 recruits SH2B1, which in turn is phosphorylated by JAK2 on tyrosine residues. These phosphotyrosines form potential binding sites for other signaling proteins. GH also promotes serine/threonine phosphorylation of SH2B1 and these phosphorylated residues may serve to recruit other proteins to the GHR-JAK2-SH2B1 complexes, such as RAC1.

Additional Information

Gene ID	25970
Other Names	SH2B adapter protein 1, Pro-rich, PH and SH2 domain-containing signaling mediator, PSM, SH2 domain-containing protein 1B, SH2B1, KIAA1299, SH2B
Target/Specificity	Widely expressed with highest levels in skeletal muscle and ovary.
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:50-200,ELISA=1:5000-10000
Format	0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	SH2B1
Synonyms	KIAA1299, SH2B
Function	Adapter protein for several members of the tyrosine kinase receptor family. Involved in multiple signaling pathways mediated by Janus kinase (JAK) and receptor tyrosine kinases, including the receptors of insulin (INS), insulin-like growth factor 1 (IGF1), nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), glial cell line-derived neurotrophic factor (GDNF), platelet-derived growth factor (PDGF) and fibroblast growth factors (FGFs). In growth hormone (GH) signaling, autophosphorylated ('Tyr-813') JAK2 recruits SH2B1, which in turn is phosphorylated by JAK2 on tyrosine residues. These phosphotyrosines form potential binding sites for other signaling proteins. GH also promotes serine/threonine phosphorylation of SH2B1 and these phosphorylated residues may serve to recruit other proteins to the GHR-JAK2-SH2B1 complexes, such as RAC1. In leptin (LEP) signaling, binds to and potentiates the activation of JAK2 by globally enhancing downstream pathways. In response to leptin, binds simultaneously to both, JAK2 and IRS1 or IRS2, thus mediating formation of a complex of JAK2, SH2B1 and IRS1 or IRS2. Mediates tyrosine phosphorylation of IRS1 and IRS2, resulting in activation of the PI 3- kinase pathway. Acts as a positive regulator of NGF-mediated activation of the Akt/Forkhead pathway; prolongs NGF-induced phosphorylation of AKT1 on 'Ser-473' and AKT1 enzymatic activity. Enhances the kinase activity of the cytokine receptor-associated tyrosine kinase JAK2 and of other receptor tyrosine kinases, such as FGFR3 and NTRK1. For JAK2, the mechanism seems to involve dimerization of both, SH2B1 and JAK2. Enhances RET phosphorylation and kinase activity. Isoforms seem to be

differentially involved in IGF1 and PDGF-induced mitogenesis (By similarity).

Cellular Location

Cytoplasm. Membrane. Nucleus. Note=Shuttles between the nucleus and the cytoplasm.

Tissue Location

Widely expressed with highest levels in skeletal muscle and ovary.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.