10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

SMO Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP50630

Product Information

Application	WB
Primary Accession	Q99835
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	polyclonal
Calculated MW	86397

Additional Information

Gene ID	6608
Other Names	Smoothened homolog, SMO, Protein Gx, SMO, SMOH
Dilution	WB~~ 1:500
Format	Rabbit IgG in phosphate buffered saline (without Mg2+ and Ca2+), pH 7.4, 150mM NaCl, 0.09% (W/V) sodium azide and 50% glycerol.
Storage Conditions	-20℃

Protein Information

Name	SMO {ECO:0000303|PubMed:8906787, ECO:0000312|HGNC:HGNC:11119}
Function	G protein-coupled receptor, which transduces the smoothened signaling pathway (PubMed:19592253, PubMed:27437577, PubMed:28344083, PubMed:31168089, PubMed:32929279, PubMed:36202993). Activated by cholesterol in response to hedgehog (DHH, IHH or SHH) morphogens (PubMed:27437577, PubMed:28344083, PubMed:32929279). In absence of hedgehog, SMO is inactivated by patched protein (PTCH1 or PTCH2), which prevents SMO access to cholesterol (PubMed:28344083). In response to hedgehog-binding to pathched, inhibition is relieved, promoting SMO translocation to primary cilium and activation by cholesterol: cholesterol causes a conformation change that triggers signaling via G protein G(i), mediating inhibition of adenylate cyclase activity and decreassed production of cAMP (PubMed:28344083, PubMed:31168089). Decreased cAMP levels then inhibit protein kinase A (PKA) and promote release of GLI (GLI1, GLI2 and GLI3) transcription factors, which activate expression of target genes (PubMed:31168089). Active SMO also directly inhibits PKA by sequestering its catalytic subunit, PRKACA, at the cell membrane, preventing PRKACA-mediated phosphorylation and subsequent processing of GLI transcription factors (PubMed:36202993, PubMed:39138140). Active SMO also

	promotes the removal of GPR161, a key inhibitor of the smoothened signaling pathway, from primary cilia (By similarity).
Cellular Location	Cell membrane {ECO:0000250|UniProtKB:P56726}; Multi-pass membrane protein. Cell projection, cilium membrane; Multi-pass membrane protein. Note=Translocates to primary cilium in response to hedgehog (DHH, IHH or SHH) morphogens (By similarity) Cilium localization is mediated via a beta-arrestin and KIF3A-dependent mechanism (By similarity). {ECO:0000250|UniProtKB:P56726}

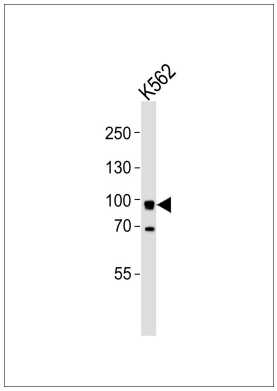
Background

G protein-coupled receptor that probably associates with the patched protein (PTCH) to transduce the hedgehog's proteins signal. Binding of sonic hedgehog (SHH) to its receptor patched is thought to prevent normal inhibition by patched of smoothened (SMO). Required for the accumulation of KIF7 and GLI3 in the cilia.

References

Stone D.M.,et al.Nature 384:129-134(1996).
Xie J.,et al.Nature 391:90-92(1998).
Jiang N.,et al.Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
Endoh-Yamagami S.,et al.Curr. Biol. 19:1320-1326(2009).
Seo S.,et al.PLoS Genet. 7:E1002358-E1002358(2011).

Images



Western blot analysis of lysate from K562 cell line,using SMO Antibody(AP50630). AP50630 was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody.Lysate at 35ug.

Citations

- Novel-smoothened inhibitors for therapeutic targeting of na □ve and drug-resistant hedgehog pathway-driven cancers.

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