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Patched Polyclonal Antibody

Catalog # AP71781

Product Information

Application	WB, IHC-P, IF, ICC, E
Primary Accession	Q13635
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	160545

Additional Information

Gene ID	5727
Other Names	PTCH1; PTCH; Protein patched homolog 1; PTC; PTC1
Dilution	WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/10000. Not yet tested in other applications. IHC-P~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/10000. Not yet tested in other applications. IF~~1:50~200 ICC~~N/A E~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

Protein Information

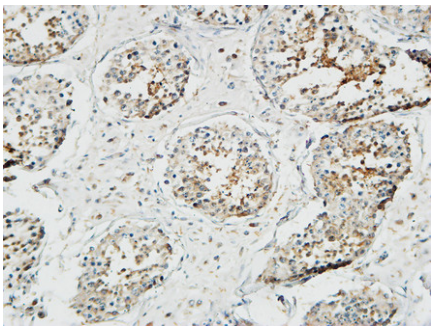
Name	PTCH1 {ECO:0000303|PubMed:31555730, ECO:0000312|HGNC:HGNC:9585}
Function	Negative regulator of the smoothened signaling pathway, which acts as a receptor for hedgehog (SHH, IHH and DHH) morphogens (PubMed:21537345, PubMed:29954986, PubMed:29995851, PubMed:30139912, PubMed:31127104, PubMed:31555730, PubMed:37611095, PubMed:40128518, PubMed:9811851). In absence of hedgehog, acts as an inhibitor of smoothened protein (SMO) by preventing SMO access to cholesterol: mechanistically, acts as a cholesterol transporter, which depeletes cholesterol from the outer leaflet of plasma membrane, thereby preventing cholesterol-binding to the extracellular CRD region of SMO (PubMed:31555730, PubMed:37611095). Hedgehog-binding inhibits PTCH1 cholesterol transporter activity, promoting SMO activation by cholesterol and transduction of the smoothened signaling pathway (PubMed:31548691). Molecular mechanism governing cholesterol transport are still unclear: may move cholesterol from the outer to the inner leaflet of the membrane in exchange for potassium or sodium ion export in the opposite direction (PubMed:37611095). Seems to have a tumor suppressor function, as

	inactivation of this protein is probably a necessary, if not sufficient step for tumorigenesis (PubMed:8658145).
Cellular Location	Cell membrane; Multi-pass membrane protein. Cell projection, cilium membrane {ECO:0000250|UniProtKB:Q61115}; Multi-pass membrane protein Note=Localizes to primary cilium and prevents cilium localization of SMO (PubMed:29954986, PubMed:29995851, PubMed:30139912, PubMed:31127104, PubMed:31555730). Delocalizes from primary cilium following hedgehog-binding (By similarity) {ECO:0000250|UniProtKB:Q61115, ECO:0000269|PubMed:29954986, ECO:0000269|PubMed:29995851, ECO:0000269|PubMed:30139912, ECO:0000269|PubMed:31127104, ECO:0000269|PubMed:31555730}
Tissue Location	In the adult, expressed in brain, lung, liver, heart, placenta, skeletal muscle, pancreas and kidney. Expressed in tumor cells but not in normal skin.

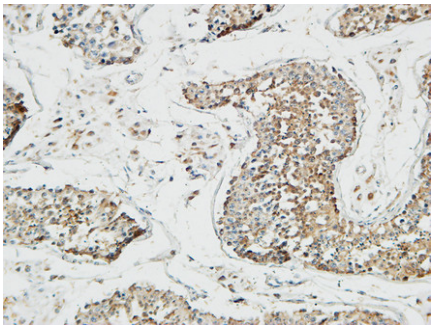
Background

Acts as a receptor for sonic hedgehog (SHH), indian hedgehog (IHH) and desert hedgehog (DHH). Associates with the smoothened protein (SMO) to transduce the hedgehog's proteins signal. Seems to have a tumor suppressor function, as inactivation of this protein is probably a necessary, if not sufficient step for tumorigenesis.

Images



Immunohistochemical analysis of paraffin-embedded Human testis. 1, Antibody was diluted at 1:100(4°,overnight). 2, High-pressure and temperature EDTA, pH8.0 was used for antigen retrieval. 3,Secondary antibody was diluted at 1:200(room temperature, 30min).



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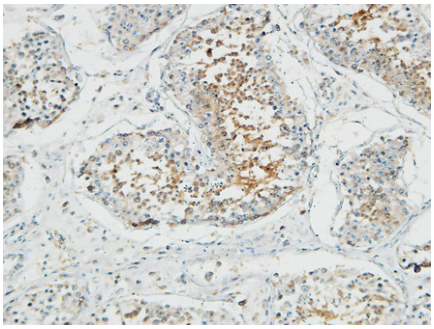

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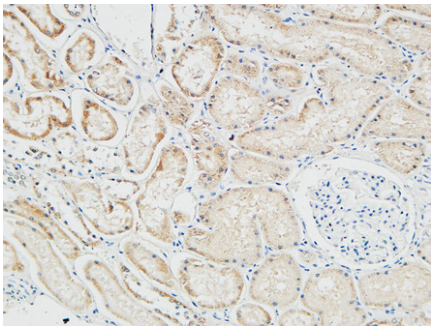
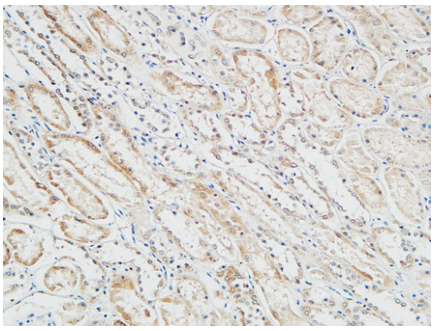


Immunohistochemical analysis of paraffin-embedded Human Right kidney. 1, Antibody was diluted at 1:100(4°,overnight). 2, High-pressure and temperature EDTA, pH8.0 was used for antigen retrieval. 3,Secondary antibody was diluted at 1:200(room temperature, 30min).



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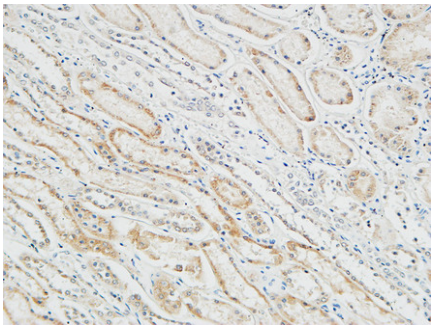

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Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.