



Qty: 100 µg/200 µL

Mouse anti-Shh

Catalog No. 435800

Lot No.

## Mouse anti-Shh

### FORM

This affinity-purified mouse monoclonal antibody is supplied as a 200 µL aliquot at a concentration of 0.5 mg/mL in PBS, pH 7.4, containing 0.1% sodium azide. This antibody is highly purified from mouse ascites by protein A chromatography.

Clone: 67.8

Isotype: IgG1

### IMMUNOGEN

Recombinant protein derived from the N-terminal region of mouse Shh protein.

### SPECIFICITY

This antibody is specific for mouse Shh (SHH, HHG-1) protein (accession # NP\_033196.1, Q62226), which is 100% identical with rat and gerbil and 99% homologous with human, chimpanzee, rhesus monkey and rooster. On Western blots of human IMR-32 neuroblastoma cells and mouse and rat brain lysates, it identifies the Shh precursor target band at ~45 kDa.

### REACTIVITY

Reactivity has been confirmed with human IMR-32 and mouse and rat brain cell lysates using Western blotting. The reactivity has also been confirmed with human IMR-32 cells by immunofluorescence. Based on amino acid sequence homology, reactivity with rat, gerbil, human, chimpanzee, rhesus monkey and chicken is also expected.

Sample	Western Blotting	Immuno-fluorescence	Immuno-Precipitation
Human	+++	+++	0
Mouse	+++	ND	0
Rat	+++	ND	0
Gerbil	ND	ND	ND
Chimpanzee	ND	ND	ND
Chicken	ND	ND	ND
Rhesus monkey	ND	ND	ND

(Excellent +++, Good ++, Poor +, No reactivity 0, Not applicable N/A, Not determined ND)

### USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Western Blotting: 2 µg/mL  
Immunofluorescence: 2 µg/mL

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## STORAGE

Store at 2-8°C for up to one month. Store at -20°C for long-term storage. Avoid repeated freezing and thawing.

## BACKGROUND

Sonic hedgehog (Shh) is a secreted protein that controls cell fate and mitogenesis in both vertebrates and invertebrates. In mammals, there are three secreted hedgehog genes (sonic, desert, Indian) sharing about 60% of amino acid identity.<sup>1</sup> Newly synthesized Shh weighs 45 kDa and is referred to as the Shh-precursor. As a secreted protein Shh undergoes autoprocessing to generate a 20 kDa N-terminal signaling domain (Shh-N) and a 25 kDa C-terminal domain with no known signaling role.<sup>2</sup> Shh is the best studied ligand of the hedgehog signaling pathway. Shh regulates cell proliferation and differentiation in a diverse array of essential patterning events ranging from embryonic segmentation and appendage development in insects to neural tube differentiation in vertebrates. Shh remains important in the adult where it controls cell division and has homeostatic roles in postembryonic tissues to maintain stem cells.<sup>3</sup>

Proteins of the hedgehog family play a pathological role in the group of endodermally derived human cancers that together account for 25% of human cancer deaths.<sup>4</sup> Sonic hedgehog has recently been implicated as a crucial factor in gastric organogenesis and gland differentiation, therefore, in a variety of digestive tract cancers.<sup>5</sup>

## REFERENCES

1. Katoh Y et al. *Int J Mol Med* 18(6):1019-23, 2006.
2. Bumcrot DA et al. *Mol Cell Biol* 15(4):2294-2303, 1995.
3. Fu JR et al. *Acta Pharmacol Sin* 27(6):685-93, 2006.
4. Thayer SP et al. *Nature*. 425(6960):851-6, 2003.
5. Yoshizaki A et al. *World J Gastroenterol* 12(35):5687-91, 2006.

## RELATED PRODUCTS

<b>Product</b>	<b>Conjugate</b>	<b>Cat. No.</b>
Protein A	Sepharose 4B	10-1041
rec-Protein G	Sepharose 4B	10-1241
ZyMAX™ Goat anti-rabbit IgG	Unconjugated	81-6100
ZyMAX™ Goat anti-mouse IgG	Unconjugated	81-6500

Secondary antibody conjugates.

<b>Conjugate</b>	<b>Goat anti-rabbit IgG (H+L)</b>	<b>Goat anti-mouse IgG (H+L)</b>	<b>Ex/Em*</b>	<b>Fluorescence similar to--</b>
Alexa Fluor® 488	A11008	A11001	495/519	FITC
Alexa Fluor® 555	A21428	A21422	555/565	Cy3
Alexa Fluor® 594	A11012	A11005	590/617	Texas Red
Alexa Fluor® 647	A21244	A21235	650/668	Cy5
HRP	81-6120	81-6520	NA**	NA
AP	81-6122	81-6522	NA	NA
Biotin	B2770	B2763	NA	NA

\*Excitation/emission (nm); \*\*Not applicable

For additional secondary antibody conjugates, visit [www.invitrogen.com/antibodies](http://www.invitrogen.com/antibodies)

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