

Revision 1

Store at -20C

#34052

Human Sonic Hedgehog (Shh) Recombinant Protein

25 µg


Cell Signaling
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MW (kDa):
20.2

UniProt ID:
Q15465

Entrez-Gene Id:
6469

Background

Hedgehog proteins (Hh) are secreted signaling proteins that play many roles during animal development. Aberrant Hh signaling activity can be associated with numerous birth defects and uncontrolled Hh pathway activation is linked to the development of several types of cancers (1-2). The three identified vertebrate Hh genes are Sonic (*Shh*), Indian (*Ihh*) and Desert (*Dhh*), all of which have distinct as well as overlapping roles (3-5). Hh proteins are synthesized as 45 kDa precursors that undergo auto-cleavage to generate a 19 kDa amino-terminal peptide (Hh-N) and a carboxy-terminal peptide (Hh-C). The Hh-N becomes covalently attached to a cholesterol molecule at its carboxy terminus and acetylated at its amino terminus. This doubly modified Hh-N peptide is released from cells and responsible for all known Hedgehog signaling activity (6).

Endotoxin

Endotoxin levels are less than or equal to 1 EU / 1 µg hShh.

Purity

A greater than or equal to 95% purity was determined by SDS-PAGE.

Source / Purification

Recombinant human Shh was expressed in *E. coli* and is supplied in a lyophilized form.

Bioactivity

The bioactivity of recombinant human Shh was determined in a CCL-226 cell proliferation assay. The ED₅₀ of each lot is less than or equal to 5 µg/mL.

Storage

Human Sonic Hedgehog (Shh) Recombinant Protein is supplied as lyophilized material that is very stable at -20°C. It is recommended to reconstitute with sterile water at a concentration of 0.1 mg/mL which can be further diluted in aqueous solutions as needed. Addition of a carrier protein (0.1% HSA or BSA) is recommended for long-term storage.

Background References

- Ingham, P.W. and McMahon, A.P. (2001) *Genes Dev.* 15, 3059-3087.
- McMahon, A.P. et al. (2003) *Curr. Top Dev. Biol.* 53, 1-114.
- Zhang, X.M. et al. (2001) *Cell* 106, 781-792.
- Adolphe, C. et al. (2004) *Development* 131, 5009-5019.
- Pathi, S. et al. (2001) *Mech. Dev.* 106, 107-117.
- Bijlsma, M.F. et al. (2004) *Bioessays* 26, 387-394.

APPLICATIONS KEY

CROSS-REACTIVITY KEY H: human M: mouse R: rat Hm: hamster Mk: monkey Vir: virus Mi: mink C: chicken Dm: D. melanogaster X: Xenopus Z: zebrafish B: bovine Dg: dog Pg: pig Sc: S. cerevisiae Ce: C. elegans Hr:

hspc: Pork rabbit All: all species expected

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