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#71711**Human/Mouse Indian Hedgehog (Ihh)  
Recombinant Protein**

25 µg

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**For Research Use Only. Not for Use in Diagnostic Procedures.****MW (kDa):**  
19.9**UniProt ID:**  
#Q80XI9, #Q14623**Entrez-Gene Id:**  
16147, 3549**Background**

Indian hedgehog (Ihh) is a cell signaling protein that is one of the three proteins in the hedgehog family (1-3). Ihh is expressed in adult kidney and liver and acts as an antagonist of the Wnt signaling pathway in colon cancers (1,2). The Wnt signaling pathway plays a role in carcinogenesis and in embryonic development, and any gene mutations in this pathway lead to various diseases (2,4-6). The Ihh protein is involved in chondrocyte differentiation, proliferation, and maturation especially during endochondral ossification, and is a regulator of bone growth (7).

**Endotoxin**

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

**Purity**

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

**Source / Purification**

Recombinant human/mouse Ihh was expressed in *E. coli* and is supplied in a lyophilized form.

**Background References**

1. Marigo, V. et al. (1995) *Genomics* 28, 44-51.
2. van den Brink, G.R. et al. (2004) *Nat Genet* 36, 277-82.
3. Kumar, S. et al. (1996) *Genetics* 142, 965-72.
4. Nusse, R. and Varmus, H.E. (1992) *Cell* 69, 1073-87.
5. Logan, C.Y. and Nusse, R. (2004) *Annu Rev Cell Dev Biol* 20, 781-810.
6. Komiya, Y. and Habas, R. (2008) *Organogenesis* 4, 68-75.
7. Vortkamp, A. et al. (1996) *Science* 273, 613-22.

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