

## DESCRIPTION

|                           |  |
|---------------------------|--|
| <b>Species Reactivity</b> | Mouse  |
| <b>Specificity</b>        | Detects mouse Desert Hedgehog/Dhh C-Terminus in Western blots. In Western blots, less than 5% cross-reactivity with recombinant mouse (rm) Dhh N-terminus peptide, rmShh C-terminus peptide, and rmlhh C-terminus peptide is observed. |
| <b>Source</b>             | Polyclonal Goat IgG  |
| <b>Purification</b>       | Antigen Affinity-purified  |
| <b>Immunogen</b>          | <i>E. coli</i> -derived recombinant mouse Desert Hedgehog/Dhh C-Terminus<br>Cys199-Gly396<br>Accession # Q61488  |
| <b>Formulation</b>        | Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.   |

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

|                     | Recommended Concentration | Sample  |
|---------------------|---------------------------|---|
| <b>Western Blot</b> | 0.1 µg/mL                 | Recombinant Mouse Desert Hedgehog/Dhh, C-Terminus |

## PREPARATION AND STORAGE

|                                |   |
|--------------------------------|---|
| <b>Reconstitution</b>          | Reconstitute at 0.2 mg/mL in sterile PBS.   |
| <b>Shipping</b>                | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.   |
| <b>Stability &amp; Storage</b> | <p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul> |

## BACKGROUND

Desert Hedgehog (Dhh) belongs to the highly conserved Hedgehog family of proteins which are involved in multiple developmental processes. Hedgehogs are synthesized as 45 kDa precursors that are cleaved autocatalytically. The 19 kDa N-terminal fragment remains membrane associated due to its cholesterol and palmitate modifications. Binding of this fragment to Patched receptors results in the loss of Patched repression of Smoothened signaling (1-4). Dhh binds both Patched and Patched 2 as well as Hedgehog interacting protein (Hip) (5). Within the N-terminal peptide, mouse Dhh shares 97% and 100% amino acid (aa) sequence identity with human and rat Dhh, respectively. It shares 74% aa sequence identity with mouse Indian (Ihh) and Sonic hedgehog (Shh) (6, 7). Dhh is produced by Sertoli cells and is required for testis development and spermatogenesis (8, 9). It induces steroidogenic factor 1 which is instrumental in promoting Leydig cell differentiation (10, 11). It also promotes the deposition of basal lamina surrounding seminiferous tubules (8). In humans, mutations of Dhh are associated with pure gonadal dysgenesis (12). Dhh is expressed in the female by ovarian granulosa cells and the corpus luteum (13). Its up-regulation in human ovarian cancer correlates positively with proliferative index and negatively with prognosis (14). Dhh is also expressed by Schwann cells and is up-regulated following nerve injury (15, 16). It induces the expression of Patched and Hip in nerve fibroblasts and promotes the formation of the connective tissue sheath surrounding peripheral nerves (15).

## References:

1. van den Brink, G.R. (2007) *Physiol. Rev.* **87**:1343.
2. Riobo, N.A. and D.R. Manning (2007) *Biochem. J.* **403**:369.
3. Porter, J.A. *et al.* (1995) *Nature* **374**:363.
4. Carpenter, D. *et al.* (1998) *Proc. Natl. Acad. Sci.* **95**:13630.
5. Pathi, S. *et al.* (2001) *Mech. Dev.* **106**:107.
6. Echelard, Y. *et al.* (1993) *Cell* **75**:1417.
7. Chang, D.T. *et al.* (1994) *Development* **120**:3339.
8. Pierucci-Alves, F. *et al.* (2001) *Biol. Reprod.* **65**:1392.
9. Bitgood, M.J. *et al.* (1996) *Curr. Biol.* **6**:298.
10. Yao, H.H.-C. *et al.* (2002) *Genes Dev.* **16**:1433.
11. Park, S.Y. *et al.* (2007) *Endocrinology* **148**:3704.
12. Canto, P. *et al.* (2004) *J. Clin. Endocrinol.* **89**:4480.
13. Russell, M.C. *et al.* (2007) *Biol. Reprod.* **77**:226.
14. Chen, X. *et al.* (2007) *Cancer Sci.* **98**:68.
15. Parmantier, E. *et al.* (1999) *Neuron* **23**:713.
16. Bajestan, S.N. *et al.* (2006) *J. Neurobiol.* **66**:243.