

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Desert Hedgehog/Dhh C-Terminus in direct ELISAs and Western blots. In Western blots, no cross-reactivity with recombinant mouse (rm) Dhh N-terminal peptide (aa 23-198), rmShh (aa 199-437), rmShh (aa 25-198), or rmlhh (aa 241-499) is observed.
Source	Monoclonal Rat IgG _{2A} Clone # 148644
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant mouse Desert Hedgehog/Dhh C-Terminus Cys199-Gly396 Accession # Q61488
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

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
Western Blot	1 µg/mL	Recombinant Mouse Desert Hedgehog (C23II), N-Terminus (Catalog # 733-DH)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> 12 months from date of receipt, -20 to -70 °C as supplied. 1 month, 2 to 8 °C under sterile conditions after reconstitution. 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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:

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