Recombinant Mouse Wnt-10b

Catalog Number: 2110-WN

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived Met1-Lys389 Accession # NP_035848
N-terminal Sequence Analysis	Asn29
Predicted Molecular Mass	40.1 kDa

SPECIFICATIONS

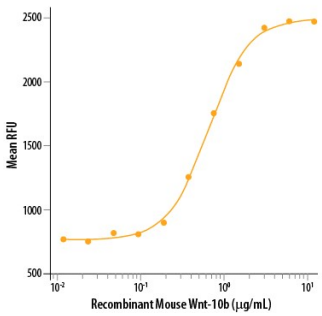
SDS-PAGE	42 kDa, reducing conditions
Activity	Measured in a cell proliferation/survival assay using IEC-18 rat small intestinal epithelial cells. The ED_{50} for this effect is 0.3-1.2 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>85%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS, NaCl, EDTA and CHAPS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

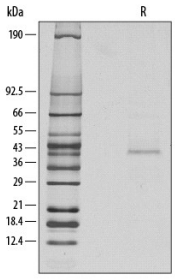
DATA

Bioactivity



Recombinant Mouse Wnt-10b (Catalog # 2110-WN) stimulates cell proliferation/survival of the IEC-18 rat small intestinal epithelial cell line. The ED_{50} for this effect is 0.3-1.2 µg/mL.

SDS-PAGE



1 µg/lane of Recombinant Mouse Wnt-10b was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a band at 42 kDa.

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BACKGROUND

Wnt-10b (also known as Wnt-12) is a 42-44 kDa member of the Wnt family of secreted, highly conserved, cysteine-rich glycoproteins that play important roles in vertebrate pattern formation, cell fate decision, axon guidance, and tumor formation (1-3). Mouse Wnt-10b cDNA encodes a 361 amino acid (aa) precursor that contains a 28 aa signal sequence plus a 361 aa mature protein that contains two glycosylation sites, three potential phosphorylation sites, and a potential palmitoylation site (3, 4). A short isoform is reported that lacks aa 143-238 of the precursor (1, 4). Mouse Wnt-10b shares 97-98% aa identity with human, rat, equine, porcine and canine Wnt-10b. Wnt-10b plays a critical role in maintaining mesenchymal stem cells and determining whether they differentiate to adipocytes or osteoblasts (5-7). Mouse Wnt-10b deletion produces age-dependent loss of bone mass due to defective production of osteoblasts, while transgenic over-expression increases postnatal osteoblast differentiation and inhibits adipocyte differentiation (5-7). Ectopic expression of Wnt-10b in an obesity and diabetes-prone background, such as the ob/ob mouse, inhibits obesity (8). In mouse skeletal muscle, Wnt-10b is expressed inversely with SREBP1c and increases insulin sensitivity (9). In humans, a mis-sense polymorphism is responsible for a malformation of hands and feet, while a C256Y inactivating mutation is associated with severe early-onset obesity (10, 11). Wnt-10 is mainly produced by stem cells and pre-osteoblasts, but also by adult bone marrow $CD8^+$ T lymphocytes stimulated with parathyroid hormone (12). In some hepatocellular carcinomas, Wnt-10b can inhibit cancer cell growth, but in others, it can act synergistically with FGFs to stimulate cell growth (13). Several Wnts, including Wnt-10b, are expressed in both normal and/or malignant colon tissues (14). As a key regulator, Wnt signaling plays a major role in the process of colon carcinogenesis (15).

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