

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived Gln18-Lys359 Accession # NP_110402
N-terminal Sequence Analysis	Gln18 predicted: No results obtained, sequencing might be blocked
Predicted Molecular Mass	38.5 kDa

SPECIFICATIONS

SDS-PAGE	45 kDa, reducing conditions
Activity	Measured by its ability to inhibit Wnt-3a-induced alkaline phosphatase production by MC3T3-E1 mouse preosteoblast cells. The ED ₅₀ for this effect is 125-750 ng/mL, in the presence of 5 ng/mL of Recombinant Mouse Wnt-3a (Catalog # 1324-WN). Optimal dilutions should be determined by each laboratory for each application.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS, 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 containing at least 0.1% human or bovine serum albumin.
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. <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. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Wnt proteins are cysteine-rich secreted glycoproteins that play critical roles in both carcinogenesis and embryonic development. Wnts bind to receptors of the Frizzled family in conjunction with a coreceptor of the low-density lipoprotein receptor-related protein family (LRP-5 or -6), or the Ryk atypical receptor tyrosine kinase (1-3). Downstream effects of Wnt signaling occur through multiple pathways with differing intracellular components: the canonical Wnt/β-catenin pathway, the Wnt/Ca²⁺ pathway, and the planar cell polarity (PCP) pathway (1-4). Wnt-5b is a 49 kDa glycoprotein that is implicated in the Wnt/Ca²⁺ and PCP pathways (4-8). These pathways can inhibit canonical Wnt/β-catenin signaling (4, 7). Human and mouse Wnt-5b are synthesized as 359 amino acid (aa) precursors that contain a 17 aa signal sequence and a 342 aa mature region. Mature human Wnt-5b shares 95%, 94%, 90%, 89% and 86% aa identity with mature mouse, rat, bovine, chick and *Xenopus* Wnt-5b, respectively. Although Wnt-5a and Wnt-5b share 83% aa identity, their effects may be different. For example, Wnt-5b, but not Wnt-5a, promotes cell cycle progression and is weakly transforming (8, 9). Wnt-5a and -5b are thought to coordinate developmental events, such as chondrocyte differentiation and formation of endochondral bone (5, 6, 10). In contrast to more focused expression of Wnt-5a, Wnt-5b is constitutively expressed at low levels throughout mouse embryonic development (10, 11). In adult mice, Wnt-5b is widely expressed, including heart, liver, brain, lung, testes, kidney, and pancreas (11-13). Wnt-5b is up-regulated during early adipogenesis, and its overexpression in 3T3-L1 cells partially inhibits canonical Wnt suppression of adipogenesis (7, 14). It enhances PPARγ expression and promotes differentiation of preadipocytes (14). Human Wnt-5b polymorphisms have been associated with Type II diabetes (12).

References:

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