Recombinant Mouse Wnt-4

Catalog Number: 475-WN/CF

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived Ser23-Arg351 Accession # NP_033549
N-terminal Sequence Analysis	Ser23
Predicted Molecular Mass	36.6 kDa

SPECIFICATIONS

SDS-PAGE	43 kDa, reducing conditions
Activity	Measured by its ability to induce alkaline phosphatase production by MC3T3-E1 mouse preosteoblast cells. Nakamura, K. *et al.* (1999) Exp. Cell Res. **250**:351. The ED_{50} for this effect is 15-60 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>60%, 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. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconsitute at 50 µg/mL in sterile 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.

BACKGROUND

Wnt-4 is a 38 - 42 kDa member of the Wnt family of secreted glycoproteins, which act as short-range signaling molecules via Frizzled receptors and a cascade of intracellular signals in vertebrate embryogenesis (1 - 2). Mouse Wnt-4 is synthesized as a 351 amino acid (aa) precursor with a 22 aa signal sequence and a 329 aa mature chain. The mature chain contains two potential sites for N-linked glycosylation. Relative to other members of the Wnt family, Wnt-4 contains 83 conserved aa, including 21 cysteines (1). Mature mouse Wnt-4 shares 99% aa sequence identity with mature human and rat Wnt-4. Wnt-4 has been shown to play a critical role in the development of the reproductive system and in the formation of the kidneys, adrenals, pituitary gland, and mammary tissues (3 - 6). In the development of the reproductive system, Wnt-4 expression is down-regulated in the developing gonad after E11.5, although it persists in the developing ovary (2, 6). Targeted deletion of Wnt-4 results in masculinization of XX mice, with rudimentary development of the masculine internal (Wolffian) ducts and degeneration of the female (Mullerian) reproductive tract (2, 6). In addition to its involvement in urogenital development, Wnt-4 is also expressed in the perichondrium of the long bones (7), and promotes osteoblast differentiation (8). Wnt-4 may also be associated with abnormal proliferation in human breast tissue (9). In humans, mutations in Wnt-4 are the cause of SERKAL syndrome, a syndrome consisting of female to male sex reversal, renal, adrenal, and lung dysgenesis, and developmental defects (3), and Rokitansky-Kuster-Hauser syndrome, which is characterized by utero-vaginal atresia in otherwise phenotypically normal females with normal 46, XX karyotype (10).

References:

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