Recombinant Mouse Wnt-3a
Catalog Number: 1324-WN

DESCRIPTION

Source
Chinese Hamster Ovary cell line, CHO-derived mouse Wnt-3a protein
Ser19-Lys352
Accession # P27467

N-terminal Sequence Analysis
Ser19

Predicted Molecular Mass
37 kDa

SPECIFICATIONS

SDS-PAGE
41 kDa, reducing conditions

Activity
The ED_{50} for this effect is ≤5 ng/mL.

Measured by its ability to induce Topflash reporter activity in HEK293T human embryonic kidney cells.

Optimal concentrations should be determined by each laboratory for each application.

Endotoxin Level
<1.0 EU per 1 μg of the protein by the LAL method.

Purity
>75%, 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 40 μg/mL in sterile 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.
- 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-3a (Catalog # 1324-WN) induces alkaline phosphatase production by the MC3T3-E1 mouse preosteoblast cell line. The activity is approximately 10-fold greater than the top competitor's Wnt-3A.
Wnt-3a is one of 19 vertebrate members of the Wingless-type MMTV integration site (Wnt) family of highly conserved cysteine-rich secreted glycoproteins important for normal developmental processes (1). Wnts bind to the cell surface Frizzled family receptors in conjunction with low-density lipoprotein receptor-related protein family receptors (LRP5 or 6) resulting in the stabilization of intracellular β-catenin levels (2). As intracellular β-catenin levels rise, β-catenin binds to TCF/LEF transcription factors leading to expression of Wnt target genes (3). Endo-IWR 1 (Catalog # 3532, # PSM1324) is a cell-permeant small molecule inhibitor of Axin turnover that suppresses Wnt signal transduction by stabilizing the β-catenin destruction complex (4). Wnt-3a is a 44 kDa secreted hydrophobic glycoprotein containing a conserved pattern of 24 cysteine residues (5). Wnt-3a has two N-linked glycosylation sites (Asn 87, Asn 298), and Ser 209 is modified with palmitoleic acid (6). Glycosylation and acylation are essential for efficient Wnt secretion and biological activity, respectively (6, 7). Mouse Wnt-3a shares 96% amino acid (aa) identity with human Wnt-3a, and 97% with bovine and canine Wnt-3a. The rat Wnt-3a precursor shares 100% aa identity with mouse Wnt-3a aa 63-352 (8), and also shares 87% aa identity with Wnt3. During embryonic development, Wnt-3a is necessary for proper development of the hippocampus, anterior-posterior patterning, somite development, and tailbud formation (9-12). Wnt-3a also promotes self-renewal of hematopoietic stem cells, neural stem cells, and embryonic stem cells (13-15).

References:

8. Entrez Accession # NP_001100475.