

**DESCRIPTION**

**Source** Chinese Hamster Ovary cell line, CHO-derived Wnt-5a protein  
Gln38-Lys380  
Accession # P22725

**N-terminal Sequence Analysis** Asn44 & No results obtained: Gln38 predicted

**Predicted Molecular Mass** 38 kDa

**SPECIFICATIONS**

**Activity** Measured by its binding ability in a functional ELISA.  
In a 100 µL reaction mixture containing biotinylated Recombinant Mouse Wnt-5a at 50 ng/mL and Recombinant Human Frizzled-5 Fc Chimera (Catalog # 1617-FZC) dilutions, the concentration of Recombinant Human Frizzled-5 Fc Chimera that produces 50% of the maximal binding response is 2-20 ng/mL.

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >80%, 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 Trehalose. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

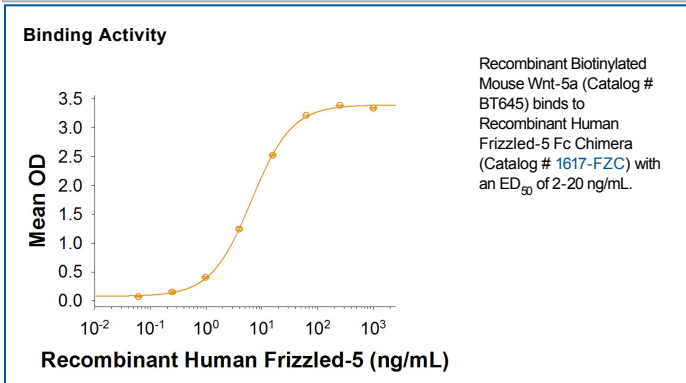
**Reconstitution** Reconstitute at 100 µg/mL in PBS.

**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage**

- 12 months from date of receipt, ≤ -20 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, ≤ -20 °C under sterile conditions after reconstitution.

**DATA**



**BACKGROUND**

Wnt-5a is a 44-50 kDa member of the Wnt family of proteins (1-6). Based on its activity towards C57Mg mammary epithelium, it is classified as a nontransforming Wnt. Human Wnt-5a is synthesized as a 380 amino acid (aa) precursor that contains a 37 aa signal sequence, a 25 aa prosegment, and a 319 aa mature region (1, 2, 3). The mature region has 24 cysteine residues that form multiple intrachain disulfide bonds, plus four N-linked glycosylation sites that are utilized for proper secretion (3, 5, 7). There is also a palmitate adduct at Cys104 that is essential for activity, and a potential palmitoleic acid modification at Ser244 that may also contribute to secretion (7-9). One alternative start site is reported at Met16. Over aa 38-380, human and mouse Wnt-5a are identical in amino acid sequence (1, 10). Cells known to express Wnt-5a include brainstem astrocytes (11), mammary epithelium (12), CD34<sup>+</sup> primitive progenitor stem cells (13), chondrocytes (14), CD34<sup>+</sup> pericytes and vascular smooth muscle cells (15), plus mesenchymal cells at various sites (16, 17). There are multiple receptors for Wnt-5a. These include Fzd-1, -2, -3, -4, -5, and -7 (3, 18-22), Ror2 (3), LRP6 (23), Ryk (24) and sFRP1 (25). All these molecules function within the context of a larger number of "co-factors" that regulate signaling by the Wnts. Initially, it was suggested that there were three pathways for Wnt signaling; a  $\beta$ -catenin-mediated canonical pathway, and two noncanonical pathways described as the Wnt/JNK (PCP) pathway and the Wnt/Ca<sup>2+</sup> pathway (26, 27). And it was assumed that various Wnts could be accommodated by these classifications. At present, it is now recognized that individual Wnts, through various combinations of receptor complex subunits, can have diverse effects, perhaps even within the same cell (3, 6, 27). Further complexity is introduced by the fact that Xenopus Wnt-5a and Wnt-11 are known to form bioactive heterodimers following Tyr sulfation (28). Thus, predicting the activity of Wnt-5a, or any other Wnt, on any cell type will require substantial insight into the interaction between all the extracellular, cell surface and intracellular components of the Wnt signaling system.

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