

## DESCRIPTION

|                                                                                                                                                                                                         |                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Human                                                                                                     |
| <b>Specificity</b>                                                                                                                                                                                      | Detects human Wnt-7a in direct ELISAs. Cross-reactivity with Wnt-7b has not been determined.              |
| <b>Source</b>                                                                                                                                                                                           | Monoclonal Mouse IgG <sub>2B</sub> Clone # 946730                                                         |
| <b>Purification</b>                                                                                                                                                                                     | Protein A or G purified from hybridoma culture supernatant                                                |
| <b>Immunogen</b>                                                                                                                                                                                        | Chinese hamster ovary cell line CHO-derived recombinant human Wnt-7a<br>Met1-Lys349<br>Accession # O00755 |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 532<br>Excitation Wavelength: 534 nm<br>Emission Wavelength: 553 nm                           |
| <b>Formulation</b>                                                                                                                                                                                      | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide                                              |
| *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |                                                                                                           |

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

**Immunocytochemistry** Optimal dilution of this antibody should be experimentally determined.

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## BACKGROUND

Human Wnt-7a is one of about 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 receptors of the Frizzled family in conjunction with low-density lipoprotein receptor-related proteins (LRPs). Downstream effects of Wnt signaling occur through activation of one of three different intracellular pathways: the canonical Wnt pathway, Wnt/Ca<sup>2+</sup> pathway, and planar cell polarity. The highly transforming Wnts, including Wnt-1, -3, -3a, -7a and -8 activate the canonical pathway, which regulates β-catenin-mediated gene expression (1, 2). Human Wnt-7a is a 48 kDa secreted glycoprotein containing 24 cysteine residues that is expressed by epithelial and epithelially-derived cells of the placenta, kidney, testis, uterus, fetal lung, and fetal and adult brain (3, 4). Palmitate modification of a cysteine residue has been shown for Wnt-3a; this site is conserved on all Wnts and is Cys73 on Wnt-7a (5). When modified, increased hydrophobicity and activity is expected. Human Wnt-7a shows 97% aa identity with mouse, rat, and dog Wnt-7a and 92% aa identity with chicken Wnt-7a. During development, Wnt-7a is expressed by the dorsal ectoderm and drives expression of homeodomain transcription factors that control effectors important in patterning and cell fates in adjacent mesenchyme (6-10). When Wnt-7a is deleted, mice show disruption of dorsalization and anterior/posterior patterning during limb development and abnormalities in the reproductive tract (6-10). Wnt-7a is frequently downregulated in leukemia and lung cancers, potentially affecting homeobox (HOX) gene expression, differentiation state and growth control (11, 12). Roles for Wnt-7a have also been shown during formation of neural synapses, response of the uterus to estrogen and inflammatory cartilage destruction (10, 13, 14). Wnt-7b is a 46 kDa, secreted glycosylated protein that belongs to the Wnt family. Wnt proteins can be lipid-modified and are ligands for members of the frizzled family of receptors, which mediates cell-cell communication during development. Human Wnt-7b is synthesized as a 349 amino acid (aa) precursor that contains a 318 aa mature region. The mature region contains 24 cysteines and three potential N-linked glycosylation sites. Wnt-7b is a ligand for members of the frizzled family of seven transmembrane receptors. Probable developmental protein. May be a signaling molecule which affects the development of discrete regions of tissues. Is likely to signal over only few cell diameters. Mature human Wnt-7b shares 99% aa sequence identity with mature mouse and rat Wnt-7b. Wnt-7b also shares 80% aa sequence identity with Wnt-7a.

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