

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Wnt-7a in direct ELISAs.
Source	Monoclonal Mouse IgG ₁ Clone # 946744
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human Wnt-7a Met1-Lys349 Accession # O00755
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

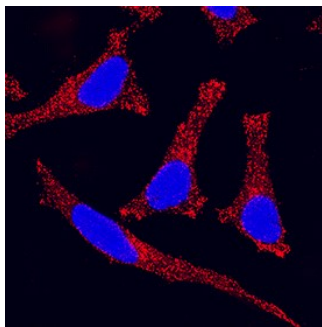
APPLICATIONS

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.

	Recommended Concentration	Sample
Immunocytochemistry	8-25 µg/mL	See Below

DATA

Immunocytochemistry



Wnt-7a in HeLa Human Cell Line. Wnt-7a was detected in immersion fixed HeLa human cervical epithelial carcinoma cell line using Mouse Anti-Human Wnt-7a Monoclonal Antibody (Catalog # MAB30081) at 25 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
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. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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/Ca²⁺ 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.

References:

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