Human Wnt-7a Alexa Fluor® 700-conjugated Antibody

Monoclonal Mouse IgG_{2B} Clone # 946730

Catalog Number: FAB3008N

100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Wnt-7a in direct ELISAs. Cross-reactivity with Wnt-7b has not been determined.
Source	Monoclonal Mouse IgG_{2B} Clone # 946730
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
Conjugate	Alexa Fluor 700 Excitation Wavelength: 675-700 nm Emission Wavelength: 723 nm
Formulation	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

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	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^{2+} 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.

PRODUCT SPECIFIC NOTICES

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