Human Wnt-5a Alexa Fluor® 350-conjugated Antibody

Monoclonal Mouse IgG_1 Clone # 871117R

Catalog Number: FAB6452U

100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Wnt-5a in direct ELISAs.
Source	Monoclonal Mouse IgG_1 Clone # 871117R
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human Wnt-5a Gln38-Lys380 Accession # P41221
Conjugate	Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 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.*

ELISA	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

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), $CD34^+$ primitive progenitor stem cells (13), chondrocytes (14), $CD34^-$ 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 β-catenin-mediated canonical pathway, and two noncanonical pathways described as the Wnt/JNK (PCP) pathway and the Wnt/Ca^{++} 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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