Mouse/Rat Wnt-5a Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF645

DESCRIPTION

Species Reactivity	Mouse/Rat
Specificity	Detects mouse and rat Wnt-5a in direct ELISAs and Western blots. In direct ELISAs, approximately 5% cross-reactivity with recombinant mouse (rm) Wnt-5b is observed and less than 2% cross-reactivity with rmWnt-1, rmWnt-3a, rmWnt-4, rmWnt-8a, and rmWnt-10b is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant mouse Wnt-5a peptide Gln254-Cys334 Accession # P22725
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
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 as a 0.2 µm filtered solution in PBS.

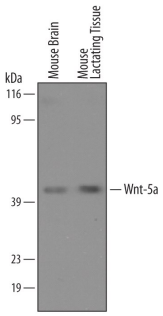
APPLICATIONS

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
Western Blot	1 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below

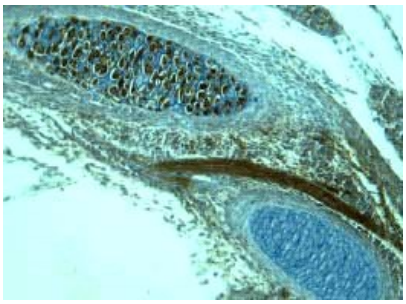
DATA

Western Blot



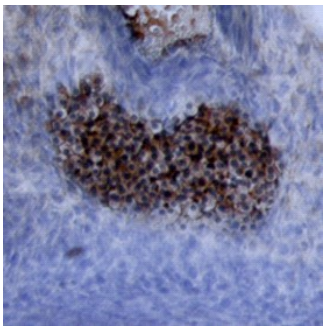
Detection of Mouse Wnt-5a by Western Blot. Western blot shows lysates of mouse brain and lactating mammary tissue. PVDF membrane was probed with 1 µg/mL of Mouse/Rat Wnt-5a Antigen Affinity-purified Polyclonal Antibody (Catalog # AF645) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF019). A specific band was detected for Wnt-5a at approximately 45 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 8.

Immunohistochemistry



Wnt-5a in Mouse Embryonic Rib. Wnt-5a was detected in immersion fixed paraffin-embedded sections of mouse embryonic rib using 15 µg/mL Mouse/Rat Wnt-5a Antigen Affinity-purified Polyclonal Antibody (Catalog # AF645) overnight at 4 °C. Tissue was stained with the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Immunohistochemistry



Wnt-5a in Mouse Embryo. Wnt-5a was detected in immersion fixed frozen sections of mouse embryo using Mouse/Rat Wnt-5a Antigen Affinity-purified Polyclonal Antibody (Catalog # AF645) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Frozen Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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.** ● 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.

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BACKGROUND

Wnt proteins are secreted glycoproteins that contain a conserved pattern of 23-24 cysteine residues. Wnts play critical roles in both carcinogenesis and embryonic development for a variety of organisms. Wnts bind to receptors of the Frizzled family, sometimes in conjunction with other membrane-associated proteins such as LRPs or proteoglycans. Downstream effects of Wnt signaling occur through different intracellular components, depending on which pathway is activated. Three pathways have been characterized: the canonical Wnt/β-catenin pathway, the Wnt/Ca^{2+} pathway, and the planar cell polarity (1-2).

Wnt-5a is part of the subgroup of Wnts that are not axis-inducing in *Xenopus* embryos and do not transform C57MG mammary epithelial cells. This subgroup is also implicated in the Wnt/Ca2+ pathway, playing roles in cell movements and cell adhesion (3). This non-canonical Wnt pathway can inhibit canonical Wnt/β-catenin signaling. In Wnt-5a deficient mouse embryos, β-catenin accumulates in the limb bud suggesting that Wnt-5a normally promotes degradation of β-catenin (4). Likewise, in *Xenopus* embryos Wnt-5a antagonizes the ability of the canonical Wnt subgroup to induce a secondary axis (5). Wnt-5a is implicated in various types of cancer and has complex roles. It acts as a tumor suppressor for mammary, B-cell, colon, and uroepithelial cancer cells but is up-regulated in melanomas, where expression levels correlate with severity of metastasis (3). Furthermore, aberrant Wnt-5a signaling results in other diseases such as rheumatoid arthritis (6). Like other developmental growth factors Wnt-5a has diverse roles in development. They are too numerous to enunciate here, as functions span from early anterior-posterior development and gastrulation movements to maintaining hematopoietic stem cell population, lung morphogenesis, and limb outgrowth. Mouse and human Wnt-5a share 97% amino acid identity.

References:

1. Miller, J.R. (2002) Genome Biol. **3**:3001.
2. Roelink, H. and R. Nusse (1991) Genes Dev. **5**:381.
3. Veeman, M.T. *et al.* (2003) Developmental Cell **5**:367.
4. Topol, L. *et al.* (2003) J. Cell Biol **162**:899.
5. Torres, M. *et al.* (1996) J. Cell Biol. **133**:1123.
6. Sen, M. *et al.* (2001) Arthritis & Rheumatism **44**:772.