

## DESCRIPTION

<b>Species Reactivity</b>	Mouse/Rat
<b>Specificity</b>	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.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant mouse Wnt-5a peptide Gln254-Cys334 Accession # P22725
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the antibody by the LAL method.
<b>Formulation</b>	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.

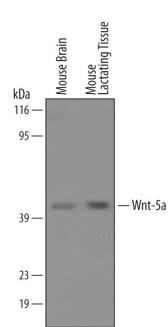
## APPLICATIONS

**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
<b>Western Blot</b>	1 µg/mL	See Below
<b>Immunohistochemistry</b>	5-15 µg/mL	See Below

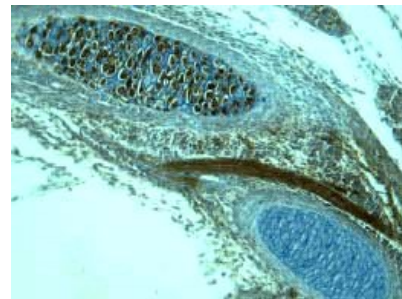
## DATA

### Western Blot



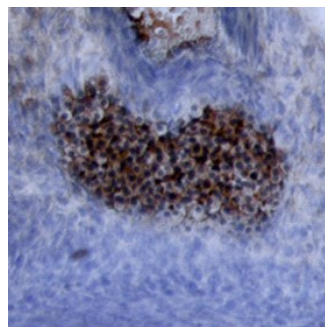
**Detection of Mouse Wnt-5a by Western Blot.** Western blot shows lysates of mouse brain and lactating mammary tissue. PVDF membrane was probed with 1 µg/mL of Mouse/Rat Wnt-5a Antigen Affinity-purified Polyclonal Antibody (Catalog # AF645) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (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

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## 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/ $\beta$ -catenin pathway, the Wnt/ $\text{Ca}^{2+}$  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/ $\text{Ca}^{2+}$  pathway, playing roles in cell movements and cell adhesion (3). This non-canonical Wnt pathway can inhibit canonical Wnt/ $\beta$ -catenin signaling. In Wnt-5a deficient mouse embryos,  $\beta$ -catenin accumulates in the limb bud suggesting that Wnt-5a normally promotes degradation of  $\beta$ -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.