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-11, and rmWnt-16 is observed.

Source: Polyclonal Goat IgG

Purification: Antigen Affinity-purified

Immunogen: E. coli-derived recombinant mouse Wnt-5a peptide

Accession #: P22725

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

<table>
<thead>
<tr>
<th>Sample</th>
<th>Western Blot</th>
<th>Immunohistochemistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 µg/mL</td>
<td>See Below</td>
<td>See Below</td>
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<tr>
<td>5-15 µg/mL</td>
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#### 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 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 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.

**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.
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 LRP's 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/Ca\(^{2+}\) 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: