

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects mouse Wnt-3a in direct ELISAs.
Source	Monoclonal Rat IgG _{2A} Clone # 217804.2R
Purification	Protein A or G purified from cell culture supernatant
Immunogen	<i>E.coli</i> -derived recombinant mouse Wnt-3a Ser36-Gln75, Trp219-Arg269 Accession # P27487
Conjugate	Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *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.

	Recommended Concentration	Sample
Intracellular Staining by Flow Cytometry	0.25-1 µg/10 ⁶ cells	BG01V human embryonic stem cells fixed and permeabilized with FlowX FoxP3 Fixation & Permeabilization Buffer Kit (Catalog # FC012)

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. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Wnt-3a 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 (1-3). Wnts bind to receptors of the Frizzled family in conjunction with a coreceptor of the low-density lipoprotein receptor-related protein family (LRP-5 or -6), or the Ryk atypical receptor tyrosine kinase (1, 4). Mouse Wnt-3a is a 44 kDa secreted hydrophobic glycoprotein containing a conserved pattern of 24 cysteine residues (5). Like other Wnts, Wnt-3a is modified by palmitate addition (at Cys 77) following glycosylation, which increases its hydrophobicity, secretion and activity (6, 7). A second site at Ser 209 is modified by palmitoleic acid and also contributes to activity and secretion (8). Mouse Wnt-3a shares 96% amino acid (aa) identity with human Wnt-3a, and 97% with bovine and canine Wnt-3a. The rat Wnt-3a precursor as it is apparently translated shares 100% aa identity with mouse Wnt-3a aa 63-352 (9). Wnt-3a also shares 87% aa identity with Wnt-3. During development, Wnt-3a is morphogen that is thought to coordinate somitogenesis and mesoderm boundary determination, and is expressed at the same locations and times as Wnt-2b and Wnt-5a (10). When Wnt-3a is deleted, mice fail to develop a hippocampus, and show defects in anterior-posterior patterning, somite development and tailbud formation (10-13). Recombinant Wnt-3a promotes proliferation of committed stem cell lineages *in vitro*, and may help maintain the cells in an undifferentiated state (6, 14) For example, Wnt-3a can induce self-renewal of hematopoietic stem cells, allowing expansion without further differentiation (6).

References:

- Mikels, A.J. and R. Nusse (2006) *Oncogene* **25**:7461.
- Miller, J.R. (2001) *Genome Biol.* **3**:3001.
- Roelink, H. and R. Nusse (1991) *Genes Dev.* **5**:381.
- Lu, W *et al.* (2004) *Cell* **119**:97.
- Smolich, B.D. *et al.* (1993) *Mol. Biol Cell* **4**:1267.
- Willert, K. *et al.* (2003) *Nature* **423**:448.
- Komekado, H. *et al.* (2007) *Genes Cells* **12**:521.
- Takada, R. *et al.* (2006) *Dev. Cell* **11**:791.
- Entrez Accession # NP_001100475.
- Dunty, W.C. *et al.* (2008) *Development* **135**:85.
- Lee, S.M.K. *et al.* (2000) *Development* **127**:457.
- Takada, S. *et al.* (1994) *Genes Dev.* **8**:174.
- Ikeya, M. and S. Takada (2001) *Mech. Dev.* **103**:27.
- Nusse, R. (2008) *Cell Res.* **18**:523.

Human/Mouse Wnt-3a Alexa Fluor® 350-conjugated Antibody

Monoclonal Rat IgG_{2A} Clone # 217804.2R

Catalog Number: IC13242U
100 µg

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.