Rat Notch-2 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1190

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat Notch-2 in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 5% cross-reactivity with recombinant rat Notch-1 is observed, and less than 1% cross-reactivity with recombinant mouse Notch-3 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant rat Notch-2 Leu26-Glu492 Accession # Q9QW30
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 either lyophilized or as a 0.2 µm filtered solution in PBS.

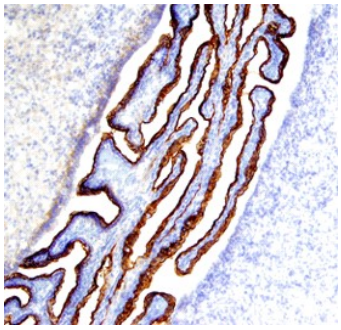
APPLICATIONS

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	Sample
Western Blot	0.1 µg/mL	Recombinant Rat Notch-2 Fc Chimera (Catalog # 1190-NT)
Flow Cytometry	2.5 µg/10^6 cells	Rat splenocytes
Immunohistochemistry	5-15 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Blockade of Receptor-ligand Interaction	In a functional ELISA, 2-5 µg/mL of this antibody will block 50% of the binding of 200 ng/mL of Recombinant Rat Jagged-1 Fc Chimera (Catalog # 599-JG) to immobilized Recombinant Rat Notch-2 Fc Chimera (Catalog # 1190-NT) coated at 5 µg/mL (100 µL/well). At 20 µg/mL, this antibody will block >90% of the binding.	

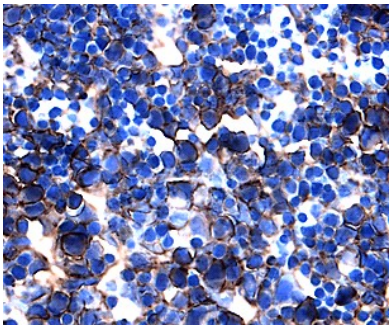
DATA

Immunohistochemistry



Notch-2 in Rat Brain. Notch-2 was detected in perfusion fixed frozen sections of rat brain (choroid plexus) using 5 µg/mL Goat Anti-Rat Notch-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1190) 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 Frozen Tissue Sections.

Immunohistochemistry



Notch-2 in Embryonic Rat Liver. Notch-2 was detected in immersion fixed frozen sections of embryonic rat liver (15 d.p.c.) using 1.7 µg/mL Goat Anti-Rat Notch-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1190) 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 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

Rat Notch-2 is a 300 kDa, type I transmembrane glycoprotein involved in a number of early-event developmental processes (1). In both vertebrates and invertebrates, Notch signaling is important for specifying cell fates and for defining boundaries between different cell types. The molecule is synthesized as a 2472 amino acid (aa) precursor that contains a putative 27 aa signal sequence, a 1650 aa extracellular region, a 23 aa transmembrane (TM) segment and a 772 aa cytoplasmic domain (2). The large Notch extracellular domain has 36 EGF-like repeats followed by three notch/Lin-12 repeats (LNR). Of the 36 EGF-like repeats, the 11^{th} and 12^{th}EGF-like repeats have been shown to be both necessary and sufficient for binding the ligands Serrate and Delta, in Drosophila (3). Cell surface Notch receptor is thought to be a heterodimer consisting of the ligand binding extracellular region associated with the remaining transmembrane protein, as a result of post-translational proteolytic cleavage by a furin-like enzyme. Upon ligand binding, additional proteolysis events result in the release of the Notch intracellular domain (NICD). NICD translocates into the nucleus and initiates transcription of Notch-responsive genes (4). Thus Notch acts as both a ligand-binding receptor and a nuclear factor that regulates transcription. In addition, an alternative Notch signaling pathway that is mediated by the full-length, uncleaved form of Notch-1 at the cell surface has been reported to suppress differentiation of myoblasts in response to ligand binding (5). Rat Notch-2 shows 92% and 95% aa identity to human and mouse Notch-2 extracellular domains, respectively. Relative to the extracellular region of rat Notch-1, rat Notch-2 exhibits 56% aa identity.

References:

1. Weinmaster, G. (2000) Curr. Opin. Genet. Dev. **10**:363.
2. Weinmaster, G. (1992) Development **116**:931.
3. Rebay, I. *et al.* (1991) Cell **67**:687.
4. Mumm, J.S. and R. Kopan (2000) Dev. Biol. **228**:151.
5. Bush, G. *et al.* (2001) Dev. Biol. **229**:494.

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