Mouse Notch-3 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1308

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Notch-3 in direct ELISAs and Western blots. In direct ELISAs, less than 10% cross-reactivity with recombinant human Notch-3 is observed and less than 5% cross-reactivity with recombinant rat (rr) Notch-1 and rrNotch-2 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant mouse Notch-3 Ala40-Glu468 Accession # Q61982
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.

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 Mouse Notch-3 Fc Chimera, aa 40-468 (Catalog # 1308-NT)
Flow Cytometry	2.5 µg/10^6 cells	D3 mouse embryonic stem cell line
Immunohistochemistry	5-15 µg/mL	Immersion fixed frozen sections of mouse embryo (E13-15)
Blockade of Receptor-ligand Interaction	In a functional ELISA, 1-3 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 Mouse Notch-3 (Catalog # 1308-NT) coated at 5 µg/mL (100 µL/well). At 10 µg/mL, this antibody will block >90% of the binding.	

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.
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 from date of receipt, 2 to 8 °C, reconstituted. ● 6 months from date of receipt, -20 to -70 °C, reconstituted.

BACKGROUND

Mouse Notch-3 is part of the Notch family of type I transmembrane glycoproteins involved in a number of early-event developmental processes (1). The extracellular domain of Notch receptors interact with the extracellular domain of transmembrane ligands Jagged, Delta, and Serrate expressed on the surface of a neighboring cell. In both vertebrates and invertebrates, Notch signaling is important for specifying cell fates and for defining boundaries between different cell types. The Notch molecule is synthesized as a 2318 amino acid (aa) precursor that contains an 39 aa signal sequence, a 1603 aa extracellular region, a 20 aa transmembrane (TM) segment and a 655 aa cytoplasmic domain. The large Notch extracellular domain has 34 EGF-like repeats followed by three notch/Lin-12 repeats (LNR) (2). The 11th and 12th EGF-like repeats of Notch have been shown to be both necessary and sufficient for binding the ligands Serrate and Delta, in Drosophila (3). Notch-3 has the same biochemical mechanism of signal tranduction as Notch-1, where a series of cleavage 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.

Notch-3 is predominantly expressed in the developing central nervous system of mice (2). Mutations in Notch-3 in humans cause an autosomal dominant condition called CADASIL (cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy). This disorder is characterized by recurrent ischemic strokes at an early age without any underlying vascular risk and progressive dementia. Nearly all mutations leading to this disorder are clustered in the first 5 EGF repeats of the Notch-3 gene (5). Mouse Notch-3 shows 90% aa identity to human Notch-3 and 96% to rat Notch-3 over the entire protein.

References:

1. Weinmaster, G. (2000) Curr. Opin. Genet. Dev. **10**:363.
2. Lardelli, M. *et al.* (1994) Mech Dev. **46**:123.
3. Rebay, I. *et al.* (1991) Cell **67**:687.
4. Mizutani, T. *et al.* (2001) Proc. Natl. Acad. Sci. USA **98**:9026.
5. Joutel, A. and E. Tounier-Lasserve (1998) Stem Cell & Dev. Biol. **9**:619.