

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived		
	Rat Notch-2 (Leu26 - Glu492) Accession # Q9QW30	IEGRMD	Human IgG ₁ (Pro100 - Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	Leu26		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	76.5 kDa (monomer)		

SPECIFICATIONS

SDS-PAGE	105-115 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. Immobilized rrNotch-2/Fc Chimera can bind rrJagged-1/Fc Chimera with an apparent $K_D < 5$ nM.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

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 11th and 12th 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.