

## DESCRIPTION

<b>Source</b>	Mouse myeloma cell line, NS0-derived		
	Human Notch-1 (Ala19 - Gln526) Accession # P46531	IEGRMD	Human IgG <sub>1</sub> (Pro100 - Lys330)
	N-terminus		C-terminus

**N-terminal Sequence** Ala19

## Analysis

**Structure / Form** Disulfide-linked homodimer

**Predicted Molecular Mass** 80.1 kDa (monomer)

## SPECIFICATIONS

<b>SDS-PAGE</b>	115-125 kDa, reducing conditions
<b>Activity</b>	Measured by its binding ability in a functional ELISA. Immobilized rhNotch-1 Fc Chimera at 5 µg/mL (100 µL/well) can bind rrJagged-1/Fc Chimera with an apparent $K_D$ <5 nM in a functional ELISA.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 100 µg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> <li>12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

Human Notch-1 is a 300 kDa type I transmembrane glycoprotein that is one of four human Notch homologues involved in developmental processes (1 - 3). Notch signaling is important for maintaining stem cells and inducing differentiation, especially in the nervous system and lymphoid tissues (2 - 4). Notch can specify binary cell fates; for example, promoting T- over B-cell development from a common precursor (2). More than 50% of human T-lineage acute lymphoblastic leukemia (T-ALL) have activating mutations of Notch1 (1, 5). Human Notch-1 is synthesized as a 2556 amino acid (aa) precursor that contains an 18 aa signal sequence, a 1718 aa extracellular domain (ECD) with 36 EGF-like repeats and three Lin-12/Notch repeats (LNR), a 23 aa transmembrane (TM) segment and a 785 aa cytoplasmic domain containing six ankyrin repeats, a glutamine-rich domain and a PEST sequence. The 11<sup>th</sup> and 12<sup>th</sup> EGF-like repeats bind ligands including Jagged and Delta-like families in humans (6). O-fucosylation by Fringe family members at a site within this region can inhibit the interaction of Notch with Jagged ligands, thereby promoting Delta-like ligand interactions (7). Notch-1 receptor undergoes post-translational furin-type proteolytic cleavage, forming a heterodimer through interaction of a hydrophobic area C-terminal to the LNR on the 1647 aa ligand-binding extracellular region with the 891 aa transmembrane/cytoplasmic portion (8, 9). Upon ligand binding, additional sequential proteolysis by TNF-converting enzyme (ADAM-17) and the presenilin-dependent γ-secretase results in the release of the Notch intracellular domain (NICD) which translocates into the nucleus, activating transcription of Notch-responsive genes (10). Human Notch-1 ECD aa 19 - 526, including the first 13 EGF repeats, shows 91% aa identity with corresponding regions of mouse and rat, 89% with canine, and 79% with chicken Notch-1. This region also exhibits 60% aa identity with human Notch-2 and Notch-3.

## References:

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