

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Notch-1 in ELISAs.
Source	Monoclonal Mouse IgG ₁ Clone # 527422
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Notch-1 Ala19-Gln526 Accession # P46531
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. 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.

Human Notch-1 Sandwich Immunoassay		Reagent
ELISA Capture	2-8 µg/mL	Human Notch-1 Antibody (Catalog # MAB5317)
ELISA Detection	0.5-2.0 µg/mL	Human Notch-1 Biotinylated Antibody (Catalog # BAM53171)
Standard		Recombinant Human Notch-1 Fc Chimera (Catalog # 3647-TK)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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	<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. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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 11th and 12th 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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