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# ProductInformation

**Notch-1/Fc Chimera**
Rat, Recombinant
Expressed in mouse NSO cells

Product Number **N 9286**

## Product Description

Recombinant Rat Notch-1/Fc Chimera is produced from a DNA sequence encoding the first 12 amino-terminal EGF-like domain of rat Notch-1, amino acid residues Met 1-Glu 488,[1] fused to the Fc region of human IgG1 via a polypepetide linker. The fusion protein is expressed in a mouse myeloma cell line, NSO. Mature recombinant rat Notch-1/Fc, generated by the proteolytic removal of the signal peptide, is a disulfide-linked homodimeric protein. Based on N-terminal sequencing, mature Notch-1/Fc starts at Arg 20. The calculated molecular mass is 76 kDa. As a result of glycosylation, the recombinant protein migrates as approximately 117 kDa protein in SDS-PAGE under reducing conditions. Rat Notch-1 extracellular domain shows 86% and 97% amino acid identity to human and mouse Notch-1 extracellular domains, respectively. Rat Notch-1 also exhibits 56% and 50% amino acid identity with rat Notch-2 and Notch-3 extracellular domains, respectively.

Rat Notch1 is a 300 kDa, type I transmembrane glycoprotein that is involved in a number of early-event developmental processes.[2] The molecule is synthesized as a 2531 amino acid precursor that contains an 18 amino acid signal sequence, a 1705 amino acid extracellular region, a 23 amino acid transmembrane segment, and a 785 amino acid cytoplasmic domain.[1] The large Notch1 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$^{th}$ are necessary and sufficient for binding the ligands Serrate and Delta in *Drosophiia*.[3]

In mammals, four Notch genes have been identified (Notch1-4) that are expressed in a wide variety of cells and play a crucial role in differentiation and development.[4-6] The Notch protein family is a group of highly conserved proteins important in the determination of cell fate and maintenance of progenitors in many developmental systems.

This family of proteins function both as membrane cell receptors and as transcription factors. Activation of Notch by cell-cell interactions causes a transcription inhibitory effect that enables inhibition of differentiation in some cells but not in others. As a consequence, some cells adopt a particular fate while other progenitors remain uncommitted. The Notch protein is important in cell fate during myogenesis, neurogenesis, oogenesis, and wing and eye development in *Drosophila*.

## Reagent

Recombinant Rat Notch-1/Fc Chimera is supplied as approximately 50 μg of protein lyophilized from a 0.2 μm filtered solution in phosphate buffered saline.

## Storage/Stability

Prior to reconstitution, store at –20 °C. For prolonged storage, the reconstituted product (in the presence of a carrier protein) should be stored at –20 °C in working aliquots. Avoid repeated freezing and thawing.

## Preparation Instructions

Reconstitute the contents of the vial using 0.2 μm filtered phosphate buffered saline. Prepare a stock solution of no less than 100 μg/ml. The carrier-free protein should be used immediately upon reconstitution to avoid losses in activity due to non-specific binding to the inside surface of the vial. For long term storage as a dilute solution, a carrier protein such as 0.1% human serum albumin or bovine serum albumin should be added to the vial.

## Product Profile

The biological activity of rat Notch-1/Fc Chimera is measured by its ability to bind Jagged-1. Immobilized recombinant rat Notch-1/Fc at 5 μg/ml (100 μl/well) can bind recombinant rat Jagged-1/Fc with a linear range of 6-400 ng/ml in an ELISA.

Endotoxin: < 1.0 EU (endotoxin unit)/μg cytokine as determined by the LAL method.

**References**


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