Revision 1

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#8658

Notch Receptor Interaction Antibody Sampler Kit

1 Kit (9 x 20 microliters)

Cell Signaling TECHNOLOGY®

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
ADAM9 (D64B5) Rabbit mAb	4151	20 µl	100-115, 75-80 kDa	Rabbit IgG
DLL1 Antibody	2588	20 µl	82 kDa	Rabbit
DLL3 (G93) Antibody	2483	20 µl	65 kDa	Rabbit
DLL4 Antibody	2589	20 µl	75-80 kDa	Rabbit
Jagged1 (28H8) Rabbit mAb	2620	20 µl	180 kDa	Rabbit IgG
Jagged2 (C23D2) Rabbit mAb	2210	20 µl	150 kDa	Rabbit IgG
Numb (C29G11) Rabbit mAb	2756	20 µl	72, 74 kDa	Rabbit IgG
RBPSUH (D10A4) XP® Rabbit mAb	5313	20 µl	61 kDa	Rabbit IgG
TACE (D22H4) Rabbit mAb	6978	20 µl	135 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Notch Receptor Interaction Antibody Sampler Kit provides an economical means to evaluate Notch signaling. The kit contains enough primary antibody to perform two western blots per primary.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Background

Notch signaling is activated upon engagement of the Notch receptor with its ligands, the Delta, Serrate, Lag2 (DSL) single-pass type I membrane proteins. DSL proteins contain multiple EGF-like repeats and a DSL domain that is required for binding to Notch (1,2). Five DSL proteins have been identified in mammals: Jagged1, Jagged2, Delta-like (DLL) 1, 3, and 4 (3). Ligand binding to the Notch receptor results in two sequential proteolytic cleavages of the receptor by the ADAM protease and the γ-secretase complex. The intracellular domain of Notch is released and then translocates to the nucleus where it activates transcription. Notch ligands may also be processed in a similiar manner, suggesting bi-directional signaling through receptor-ligand interactions (4-6).

TNF-α converting enzyme (TACE), also known as ADAM17, is a transmembrane metalloprotease that plays a key role in the cleavage of a number cell surface molecules in a process known as “shedding". TACE is abundantly expressed in many adult tissues, but in fetal development, expression is differentially regulated (7). TACE activates Notch in a ligand-independent manner and has been shown to play a role in the development of the *Drosophila* nervous system (8).

Recombining **B**inding **P**rotein, **SU**ppressor of **H**airless (RBPSUH), also termed RBP-J or CSL, is the DNA-binding component of the transcription complex regulated by canonical Notch signaling. In the absence of Notch activation, RBPSUH suppresses target gene expression through interactions with a co-repressor complex containing histone deacetylase. Upon activation of Notch receptors, the Notch intracellular domain (NICD) translocates to the nucleus and binds to RBPSUH. This displaces the co-repressor complex and replaces it with a transcription activation complex that includes Mastermind-like (MAML) proteins and histone acetylase p300, leading to transcriptional activation of Notch target genes (9-11).

Numb contains an amino-terminal phosphotyrosine-binding (PTB) domain and carboxy-terminal endocytic binding motifs for α-adaptin and EH (Eps15 homology) domain-containing proteins, indicating a role in endocytosis (12,13). There are four mammalian Numb splicing isoforms that are differentially expressed and may have distinct functions (14-16). Numb acts as a negative regulator of Notch signaling by promoting ubiquitination and degradation of Notch (17). The protein is asymmetrically segregated into one daughter cell during cell division, producing two daughter cells with different responses to Notch signaling and different cell fates (18,19).

Background References

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