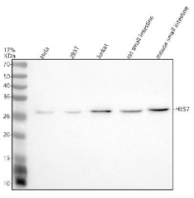
HES7 Antibody / Hairy and enhancer of split-related protein 7 (FY12124)

Catalog No.	Formulation	Size
FY12124	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9BYE0
Applications	Western Blot: 0.25-0.5ug/ml ELISA: 0.1-0.5ug/ml
Limitations	This HES7 antibody is available for research use only.



Western blot analysis of HES7 using anti-HES7 antibody. Electrophoresis was performed on a 12% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Hela whole cell lysates, Lane 2: human 293T whole cell lysates, Lane 3: human Jurkat whole cell lysates, Lane 4: rat small intestine tissue lysates, Lane 5: mouse small intestine tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-HES7 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. A specific band was detected for HES7 at approximately 25 kDa. The expected band size for HES7 is at 25 kDa.

Description

HES7 antibody detects Hairy and enhancer of split-related protein 7, encoded by the HES7 gene on chromosome 17p13.1. HES7 is a basic helix-loop-helix (bHLH) transcriptional repressor and part of the HES family of Notch effectors. It

plays a crucial role in the segmentation clock during somitogenesis, regulating cyclic gene expression that establishes somite boundaries in vertebrate embryos. HES7 functions by binding DNA at N-box and E-box elements, repressing transcription of target genes, including its own promoter, generating negative feedback loops essential for oscillatory expression. These oscillations underlie proper segmentation of the presomitic mesoderm into somites, which give rise to vertebrae and ribs.

Disruption of HES7 expression results in severe developmental defects. Mutations in HES7 are associated with spondylocostal dysostosis, a congenital condition characterized by vertebral segmentation abnormalities and rib malformations. Mouse models confirm that loss of HES7 leads to disrupted somite boundaries and vertebral defects. At the cellular level, HES7 interacts with other transcription factors and repressors to coordinate Notch, Wnt, and FGF pathway signals in the segmentation clock network.

Beyond development, aberrant HES7 expression has been detected in certain cancers, where altered Notch signaling contributes to tumorigenesis. As a transcriptional repressor, HES7 influences differentiation decisions, and dysregulation can promote uncontrolled proliferation. HES7 antibody is therefore valuable for developmental biology studies and for investigating the intersection of Notch signaling with disease pathways.

Experimentally, HES7 antibody is used in immunoblotting, immunohistochemistry, and immunofluorescence to track oscillatory expression patterns in embryonic tissues. It also aids in studying Notch-mediated gene regulatory networks, cyclic transcriptional feedback, and congenital mutation effects. In cancer biology, it helps assess HES7 misexpression and its link to proliferative signaling pathways. NSJ Bioreagents provides HES7 antibody to ensure high-quality detection of this oscillatory transcription factor across research applications.

Application Notes

Optimal dilution of the HES7 antibody should be determined by the researcher.

Immunogen

E.coli-derived human HES7 recombinant protein (Position: D26-R172) was used as the immunogen for the HES7 antibody.

Storage

After reconstitution, the HES7 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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