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SIAH1, E3 Ubiquitin Ligase. Rabbit Polyclonal Antibody

SIAH1 (seven in absentia homolog 1), E3 Ubiquitin Ligase

Background

Seven in absentia homolog 1 (SIAH-1) is a member of the RING-finger-containing E3 ubiquitin ligases. Alpha-synuclein and synphilin-1 are substrates of SIAH-1. Both proteins are involved in the development of Parkinson's disease (PD). Mutations in Parkin, another E3 ubiquitin ligase which ubiquinates synphilin-1 and glycosylated alpha-synuclein, have been defined as a major cause of autosomal recessive PD. The role of SIAH-1 in PD is highlighted by the fact that SIAH-1 is a component of the Lewy bodies and plays a role in apoptosis caused by nitric oxide (NO) induced oxidative stress.

Glyceraldehyde-3-phosphate dehydrogenase (GAPDH) a classic glycolytic enzyme, and multi-functional protein. GAPDH plays role as a mediator for cell death. GAPDH translocates to the nucleus under a variety of stressors/conditions, most of which are associated with oxidative stress. Sequential steps lead to nuclear translocation of GAPDH during cell death; 1] a catalytic cysteine in GAPDH (C150 in rat GAPDH) is S-nitrosylated by nitric oxide (NO) which is generated from inducible nitric oxide synthase (iNOS) and/or neuronal NOS (nNOS); 2] the modified GAPDH becomes capable of binding with Siah1, an E3 ubiquitin ligase, and stabilizes it;3] the GAPDH-Siah protein complex translocates to the nucleus, dependent on Siah1's nuclear localization signal, and degrades Siah1's substrates in the nucleus, which results in cytotoxicity.

Ordering Information

Catalog Number
X1859P

Size
100 µg

Form
Unconjugated

Host/Clone
Rabbit

Formulation
Provided as solution in phosphate buffered saline with 0.08% sodium azide

Concentration
See vial for concentration

Isotype
IgG

Applications
Western Blot

Species Reactivity
Human

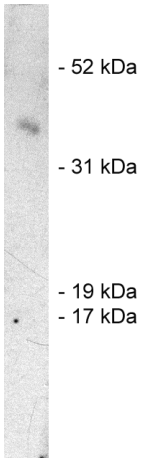
Accession Number

Human	Q8IUQ4

Immunogen

Synthetic peptide derived from the human SIAH-1 protein.

Western blot using Exalpha's X1859P, rabbit polyclonal at 1 ug/ml on human brain lysate (20 ug/lane). Blots were developed with goat anti-Mlg (1:30k) and Pierce's Supersignal West Femto system.



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Positive Control/Tissue Expression

Antibody tested on human brain lysate

Comments

Antibody can be used for Western blotting (1-5 μg/ml). Optimal concentration should be evaluated by serial dilutions.

Purification

Ammonium Sulfate Precipitation

Ship Conditions

Ship at ambient temperature, freeze upon arrival

Storage Customer

Product should be stored at -20ºC. Aliquot to avoid freeze/thaw cycles

Stability

Products are stable for one year from purchase when stored properly

References

1: Hu G., et al.; Mammalian homologs of seven in absentia regulate DCC via the ubiquitin-proteasome pathway.; Genes Dev. 11:2701-2714(1997).
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3: Hu G., Fearon E.R.; Siah-1 N-terminal RING domain is required for proteolysis function, and C-terminal sequences regulate oligomerization and binding to target proteins.; Mol. Cell. Biol. 19:724-732(1999).
4: Germani A., et al.; SIAH-1 interacts with alpha-tubulin and degrades the kinesin Kid by the proteasome pathway during mitosis.; Oncogene 19:5997-6006(2000).
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6: Matsuzawa S., Reed J.C.; Siah-1, SIP, and Ebi collaborate in a novel pathway for beta-catenin degradation linked to p53 responses.; Mol. Cell 7:915-926(2001).
7: Liu J., et al. Siah-1 mediates a novel beta-catenin degradation pathway linking p53 to the adenomatous polyposis coli protein.; Mol. Cell 7:927-936(2001).
8: Tiedt R., et al.; The RING finger protein Siah-1 regulates the level of the transcriptional coactivator OBF-1.; EMBO J. 20:4143-4152(2001).
9: Boehm J., et al.; Regulation of BOB.1/OBF.1 stability by SIAH.; EMBO J. 20:4153-4162(2001).
10: Susini L., et al.; Siah-1 binds and regulates the function of Numb. Proc. Natl. Acad. Sci. U.S.A. 98:15067-15072 (2001).

Product Specific References

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