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NPRL2 Antibody (C-term) Blocking Peptide

Synthetic peptide
Catalog # BP16818b

Specification

NPRL2 Antibody (C-term) Blocking Peptide - Product Information

Primary Accession	Q8WTW4

NPRL2 Antibody (C-term) Blocking Peptide - Additional Information

Gene ID 10641

Other Names
Nitrogen permease regulator 2-like protein, NPR2-like protein, Gene 21 protein, G21 protein, Tumor suppressor candidate 4, NPRL2, TUSC4

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

NPRL2 Antibody (C-term) Blocking Peptide - Protein Information

Name NPRL2 {ECO:0000303|PubMed:18616680, ECO:0000312|HGNC:HGNC:24969}

Function
Catalytic component of the GATOR1 complex, a multiprotein complex that functions as an inhibitor of the amino acid-sensing branch of the mTORC1 pathway (PubMed:23723238, PubMed:29590090, PubMed:35338845, PubMed:38006878). In response to amino acid depletion, the GATOR1 complex has GTPase activating protein (GAP) activity and strongly increases GTP hydrolysis by RagA/RRAGA (or RagB/RRAGB) within heterodimeric Rag complexes, thereby turning them into their inactive GDP-bound form, releasing mTORC1 from lysosomal surface and inhibiting mTORC1 signaling (PubMed:23723238, PubMed:29590090, PubMed:35338845). In the presence of abundant amino acids, the GATOR1 complex is ubiquitinated and inhibited by GATOR2 (PubMed:23723238, PubMed:36528027). Within the GATOR1 complex, NPRL2 constitutes the catalytic subunit that mediates the GTPase

activator activity and under methionine-sufficient conditions, the GTPase activator activity is inhibited by PRMT1 through methylation and consequently inducing timely mTORC1 activation (PubMed:30651352, PubMed:35338845, PubMed:27173016).

Cellular Location
Lysosome membrane. Note=Localization to lysosomes is mediated by the KICSTOR complex and is amino acid-independent.

Tissue Location
Most abundant in skeletal muscle, followed by brain, liver and pancreas, with lower amounts in lung, kidney, placenta and heart. Expressed in the frontal lobe cortex as well as in the temporal, parietal, and occipital lobes (PubMed:27173016, PubMed:26505888). Expressed in most lung cancer cell lines tested

NPRL2 Antibody (C-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

NPRL2 Antibody (C-term) Blocking Peptide - Images

NPRL2 Antibody (C-term) Blocking Peptide - Background

Suppresses Src-dependent tyrosine phosphorylation and activation of PDPK1 and its downstream signaling. Down-regulates PDPK1 kinase activity by interfering with tyrosine phosphorylation at the Tyr-9 Tyr-373 and Tyr-376 residues. May act as a tumor suppressor. Suppresses cell growth and enhanced sensitivity to various anticancer drugs.

NPRL2 Antibody (C-term) Blocking Peptide - References

Spielewoy, N., et al. Eukaryotic Cell 9(4):592-601(2010)Otani, S., et al. J Surg Oncol 100(5):358-363(2009)Neklesa, T.K., et al. PLoS Genet. 5 (6), E1000515 (2009) :Anedchenko, E.A., et al. Mol. Biol. (Mosk.) 42(6):965-976(2008)Kurata, A., et al. Cancer Sci. 99(9):1827-1834(2008)