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NPRL3 Blocking Peptide (N-Term)

Synthetic peptide
Catalog # BP21877a

Specification

NPRL3 Blocking Peptide (N-Term) - Product Information

Primary Accession Q12980

NPRL3 Blocking Peptide (N-Term) - Additional Information

Gene ID 8131

Other Names
Nitrogen permease regulator 3-like protein, -14 gene protein, Alpha-globin regulatory element-containing gene protein, Protein CGTHBA, NPRL3, C16orf35, CGTHBA, MARE

Target/Specificity
The synthetic peptide sequence is selected from aa 106-117 of HUMAN NPRL3

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.

NPRL3 Blocking Peptide (N-Term) - Protein Information

Name NPRL3 {ECO:0000303|PubMed:26505888, ECO:0000312|HGNC:HGNC:14124}

Function
As a component of the GATOR1 complex functions as an inhibitor of the amino acid-sensing branch of the mTORC1 pathway (PubMed:23723238, PubMed:29590090, PubMed:35338845). 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 negatively regulated by GATOR2, the other GATOR subcomplex, in this amino acid-sensing branch of the TORC1 pathway (PubMed:23723238).

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

Tissue Location
Widely expressed. Expressed in the frontal lobe cortex as well as in the temporal, parietal, and occipital lobes (PubMed:27173016, PubMed:26505888).

NPRL3 Blocking Peptide (N-Term) - Protocols

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

- Blocking Peptides

NPRL3 Blocking Peptide (N-Term) - Images

NPRL3 Blocking Peptide (N-Term) - Background

As a component of the GATOR1 complex, inhibitor of the amino acid-sensing branch of the TORC1 pathway. The GATOR1 complex strongly increases GTP hydrolysis by RRAGA and RRAGB within RRAGC- containing heterodimers, thereby deactivating RRAGs, releasing mTORC1 from lysosomal surface and inhibiting mTORC1 signaling.

NPRL3 Blocking Peptide (N-Term) - References

Vyas P.,et al.Genomics 29:679-689(1995).
De Gobbi M.,et al.Science 312:1215-1217(2006).
Martin J.,et al.Nature 432:988-994(2004).
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.
Neklesa T.K.,et al.PLoS Genet. 5:E1000515-E1000515(2009).