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DEPDC5 (3L15) Rabbit Monoclonal Antibody

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Catalog # AP93735

Product Information

Application	WB
Primary Accession	O75140, P61460
Reactivity	Human, Mouse
Clonality	Monoclonal
Calculated MW	181264

Additional Information

Gene ID	9681
Dilution	WB~~1:1000
Storage Conditions	-20℃

Protein Information

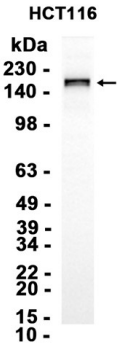
Name	DEPDC5 {ECO:0000303|PubMed:23542697, ECO:0000312|HGNC:HGNC:18423}
Function	As a component of the GATOR1 complex functions as an inhibitor of the amino acid-sensing branch of the mTORC1 pathway (PubMed:23723238, PubMed:25457612, PubMed:29590090, PubMed:29769719, PubMed:31548394, PubMed:35338845). 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:25457612, PubMed:29590090, PubMed:29769719, 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, PubMed:25457612, PubMed:29769719). Within the GATOR1 complex, DEPDC5 mediates direct interaction with the nucleotide- binding pocket of small GTPases Rag (RagA/RRAGA, RagB/RRAGB, RagC/RRAGC and/or RagD/RRAGD) and coordinates their nucleotide loading states by promoting RagA/RRAGA or RagB/RRAGB into their GDP-binding state and RagC/RRAGC or RagD/RRAGD into their GTP-binding state (PubMed:29590090, PubMed:35338845). However, it does not execute the GAP activity, which is mediated by NPRL2 (PubMed:29590090).
Cellular Location	Lysosome membrane. Cytoplasm, cytosol {ECO:0000250|UniProtKB:P61460}.

	Cytoplasm, perinuclear region {ECO:0000250|UniProtKB:P61460}. Note=Localization to lysosomes is mediated by the KICSTOR complex and is amino acid- independent.
Tissue Location	Expressed in developing and adult brain.

Background

This gene encodes a member of the IML1 family of proteins involved in G-protein signaling pathways. The mechanistic target of rapamycin complex 1 (mTORC1) pathway regulates cell growth by sensing the availability of nutrients. The protein encoded by this gene is a component of the GATOR1 (GAP activity toward Rags) complex which inhibits the amino acid-sensing branch of the mTORC1 pathway. Mutations in this gene are associated with autosomal dominant familial focal epilepsy with variable foci. A single nucleotide polymorphism in an intron of this gene has been associated with an increased risk of hepatocellular carcinoma in individuals with chronic hepatitis C virus infection. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Mar 2014]

Images



Western blot analysis of extracts from HCT116 cells using AP93735 at 1:1000.