

**PRAS40 Polyclonal Antibody**  
Catalog # AP72033**Specification**

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**PRAS40 Polyclonal Antibody - Product Information**

Application	<b>WB</b>
Primary Accession	<a href="#">Q96B36</a>
Reactivity	<b>Human, Mouse, Rat</b>
Host	<b>Rabbit</b>
Clonality	<b>Polyclonal</b>

**PRAS40 Polyclonal Antibody - Additional Information****Gene ID** 84335**Other Names**

AKT1S1; PRAS40; Proline-rich AKT1 substrate 1; 40 kDa proline-rich AKT substrate

**Dilution**

WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/5000. Not yet tested in other applications.

**Format**

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.

**Storage Conditions**

-20°C

**PRAS40 Polyclonal Antibody - Protein Information****Name** AKT1S1 {ECO:0000312|EMBL:AAH16043.1}**Function**

Negative regulator of the mechanistic target of rapamycin complex 1 (mTORC1), an evolutionarily conserved central nutrient sensor that stimulates anabolic reactions and macromolecule biosynthesis to promote cellular biomass generation and growth (PubMed:<a href="http://www.uniprot.org/citations/17277771" target="\_blank">17277771</a>, PubMed:<a href="http://www.uniprot.org/citations/17386266" target="\_blank">17386266</a>, PubMed:<a href="http://www.uniprot.org/citations/17510057" target="\_blank">17510057</a>, PubMed:<a href="http://www.uniprot.org/citations/29236692" target="\_blank">29236692</a>). In absence of insulin and nutrients, AKT1S1 associates with the mTORC1 complex and directly inhibits mTORC1 activity by blocking the MTOR substrate- recruitment site (PubMed:<a href="http://www.uniprot.org/citations/29236692" target="\_blank">29236692</a>). In response to insulin and nutrients, AKT1S1 dissociates from mTORC1 (PubMed:<a href="http://www.uniprot.org/citations/17386266" target="\_blank">17386266</a>, PubMed:<a href="http://www.uniprot.org/citations/18372248" target="\_blank">18372248</a>). Its activity is dependent on its phosphorylation state and binding to 14-3-3 (PubMed:<a href="http://www.uniprot.org/citations/16174443" target="\_blank">16174443</a>, PubMed:<a

href="http://www.uniprot.org/citations/18372248" target="\_blank">18372248</a>). May also play a role in nerve growth factor-mediated neuroprotection (By similarity).

#### Cellular Location

Cytoplasm, cytosol {ECO:0000250|UniProtKB:Q9D1F4}. Note=Found in the cytosolic fraction of the brain. {ECO:0000250|UniProtKB:Q9D1F4}

#### Tissue Location

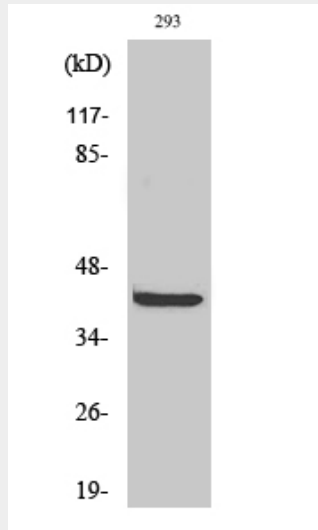
Widely expressed with highest levels of expression in liver and heart. Expressed at higher levels in cancer cell lines (e.g. A-549 and HeLa) than in normal cell lines (e.g. HEK293)

### PRAS40 Polyclonal Antibody - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### PRAS40 Polyclonal Antibody - Images



### PRAS40 Polyclonal Antibody - Background

Subunit of mTORC1, which regulates cell growth and survival in response to nutrient and hormonal signals. mTORC1 is activated in response to growth factors or amino acids. Growth factor-stimulated mTORC1 activation involves a AKT1-mediated phosphorylation of TSC1-TSC2, which leads to the activation of the RHEB GTPase that potently activates the protein kinase activity of mTORC1. Amino acid-signaling to mTORC1 requires its relocalization to the lysosomes mediated by the Ragulator complex and the Rag GTPases. Activated mTORC1 up-regulates protein synthesis by phosphorylating key regulators of mRNA translation and ribosome synthesis. mTORC1

phosphorylates EIF4EBP1 and releases it from inhibiting the elongation initiation factor 4E (eIF4E). mTORC1 phosphorylates and activates S6K1 at 'Thr-389', which then promotes protein synthesis by phosphorylating PDCD4 and targeting it for degradation. Within mTORC1, AKT1S1 negatively regulates mTOR activity in a manner that is dependent on its phosphorylation state and binding to 14-3-3 proteins. Inhibits RHEB-GTP-dependent mTORC1 activation. Substrate for AKT1 phosphorylation, but can also be activated by AKT1-independent mechanisms. May also play a role in nerve growth factor-mediated neuroprotection.