

Phospho-PUM1(Y83) Antibody Blocking peptide Synthetic peptide Catalog # BP3594a

Specification

Phospho-PUM1(Y83) Antibody Blocking peptide - Product Information

Primary Accession

<u>Q14671</u>

Phospho-PUM1(Y83) Antibody Blocking peptide - Additional Information

Gene ID 9698

Other Names Pumilio homolog 1, HsPUM, Pumilio-1, PUM1, KIAA0099, PUMH1

Target/Specificity

The synthetic peptide sequence used to generate the antibody AP3594a was selected from the region of human Phospho-PUM1-pY83. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

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.

Phospho-PUM1(Y83) Antibody Blocking peptide - Protein Information

Name PUM1 (HGNC:14957)

Function

Sequence-specific RNA-binding protein that acts as a post- transcriptional repressor by binding the 3'-UTR of mRNA targets. Binds to an RNA consensus sequence, the Pumilio Response Element (PRE), 5'- UGUANAUA-3', that is related to the Nanos Response Element (NRE) (PubMed:21572425, PubMed:18328718, PubMed:21653694, PubMed:21397187). Mediates post-transcriptional repression of transcripts via different mechanisms: acts via direct recruitment of the CCR4-POP2-NOT deadenylase leading to translational inhibition and mRNA degradation (PubMed:22955276). Also mediates deadenylation-independent repression by promoting accessibility of miRNAs (PubMed:18776931, PubMed:21397187, PubMed:21397187, PubMed:21397187, PubMed:22955276, PubMed:22955276, PubMed:22955276, PubMed:22955276, PubMed:21377425, PubMed:21397187, PubMed:21397187, PubMed:<a href="http://www.uniprot.org/citations/22955276" targe



PubMed:20818387, PubMed:20860814, PubMed:20860814, PubMed:20360814, PubMed:20818387). Acts as a post-transcriptional repressor of E2F3 mRNAs by binding to its 3'- UTR and facilitating miRNA regulation (PubMed:22345517, PubMed:29474920). Represses a program of genes necessary to maintain genomic stability such as key mitotic, DNA repair and DNA replication factors. Its ability to repress those target mRNAs is regulated by the IncRNA NORAD (non-coding RNA activated by DNA damage) which, due to its high abundance and multitude of PUMILIO binding sites, is able to sequester a significant fraction of PUM1 and PUM2 in the cytoplasm (PubMed:http://www.uniprot.org/citations/26724866"

target="_blank">26724866). Involved in neuronal functions by regulating ATXN1 mRNA levels: acts by binding to the 3'-UTR of ATXN1 transcripts, leading to their down-regulation independently of the miRNA machinery (PubMed:25768905, PubMed:29474920). Plays a role in cytoplasmic sensing of viral infection (PubMed:25340845). In testis, acts as a post- transcriptional regulator of spermatogenesis by binding to the 3'-UTR of mRNAs coding for regulators of p53/TP53. Involved in embryonic stem cell renewal by facilitating the exit from the ground state: acts by targeting mRNAs coding for naive pluripotency transcription factors and accelerates their down-regulation at the onset of differentiation (By similarity). Binds specifically to miRNA MIR199A precursor, with PUM2, regulates miRNA MIR199A expression at a postranscriptional level (PubMed:28431233).

Cellular Location

Cytoplasm. Cytoplasm, P-body. Cytoplasmic granule. Note=Recruited to cytoplasmic stress granules upon viral infection.

Tissue Location

Expressed in brain, heart, kidney, muscle, intestine and stomach. Not expressed in cerebellum, corpus callosum, caudate nucleus, hippocampus, medulla oblongata and putamen. Expressed in all fetal tissues tested.

Phospho-PUM1(Y83) Antibody Blocking peptide - Protocols

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

<u>Blocking Peptides</u>

Phospho-PUM1(Y83) Antibody Blocking peptide - Images

Phospho-PUM1(Y83) Antibody Blocking peptide - Background

PUM1 is a member of the PUF family, evolutionarily conserved RNA-binding proteins related to the Pumilio proteins of Drosophila and the fem-3 mRNA binding factor proteins of C. elegans. This protein contains a sequence-specific RNA binding domain comprised of eight repeats and N- and C-terminal flanking regions, and serves as a translational regulator of specific mRNAs by binding to their 3' untranslated regions. The evolutionarily conserved function of this protein in invertebrates and lower vertebrates suggests that the human protein may be involved in translational regulation of embryogenesis, and cell development and differentiation.



Phospho-PUM1(Y83) Antibody Blocking peptide - References

Gupta,Y.K., Structure 16 (4), 549-557 (2008)Spassov,D.S.,IUBMB Life 55 (7), 359-366 (2003)Spassov,D.S.,Gene 299 (1-2), 195-204 (2002)