

PUM1 Antibody (Y1123) Blocking Peptide
Synthetic peptide
Catalog # BP7569e**Specification**

PUM1 Antibody (Y1123) Blocking Peptide - Product InformationPrimary Accession [Q14671](#)**PUM1 Antibody (Y1123) 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 [AP7569e](/products/AP7569e) was selected from the Y1123 region of human PUM1. 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.

PUM1 Antibody (Y1123) 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](http://www.uniprot.org/citations/21572425), PubMed: [18328718](http://www.uniprot.org/citations/18328718), PubMed: [21653694](http://www.uniprot.org/citations/21653694), PubMed: [21397187](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/22955276)). Also mediates deadenylation-independent repression by promoting accessibility of miRNAs (PubMed: [18776931](http://www.uniprot.org/citations/18776931)),

PubMed:20818387, PubMed:20860814, PubMed:22345517). Following growth factor stimulation, phosphorylated and binds to the 3'-UTR of CDKN1B/p27 mRNA, inducing a local conformational change that exposes miRNA-binding sites, promoting association of miR-221 and miR-222, efficient suppression of CDKN1B/p27 expression, and rapid entry to the cell cycle (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 lncRNA 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: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.

PUM1 Antibody (Y1123) Blocking Peptide - Protocols

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

- [Blocking Peptides](#)

PUM1 Antibody (Y1123) Blocking Peptide - Images

PUM1 Antibody (Y1123) 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.

PUM1 Antibody (Y1123) Blocking Peptide - References

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