

Polyclonal Antibody to Fragile X Mental Retardation Syndrome Related Protein 1 (FXR1)

Fragile X Mental Retardation Syndrome Related Protein 1
Catalog # AP74778

Product Information

Application	WB
Primary Accession	Q5XI81
Reactivity	Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	63947

Additional Information

Gene ID	361927
Other Names	Fragile X mental retardation syndrome-related protein 1, Fxr1 {ECO:0000250 UniProtKB:P51114}
Target/Specificity	Rattus norvegicus (Rat)
Dilution	WB~~Western blotting: 0.5-2 μ g/mL Immunohistochemistry: 5-20 μ g/mL Immunocytochemistry: 5-20 μ g/mL Optimal working dilutions must be determined by end user.
Format	PBS, pH7.4, containing 0.02% NaN ₃ , 50% glycerol.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	Fxr1 {ECO:0000312 RGD:1311733}
Function	mRNA-binding protein that acts as a regulator of mRNAs translation and/or stability, and which is required for various processes, such as neurogenesis, muscle development and spermatogenesis. Specifically binds to AU-rich elements (AREs) in the 3'-UTR of target mRNAs. Promotes formation of some phase-separated membraneless compartment by undergoing liquid-liquid phase separation upon binding to AREs-containing mRNAs, leading to assemble mRNAs into cytoplasmic ribonucleoprotein granules that concentrate mRNAs with associated regulatory factors. Required to activate translation of stored mRNAs during late spermatogenesis: acts by undergoing liquid- liquid phase separation to assemble target mRNAs into cytoplasmic ribonucleoprotein granules that recruit translation initiation factor EIF4G3 to

activate translation of stored mRNAs in late spermatids (By similarity). Promotes translation of MYC transcripts by recruiting the eIF4F complex to the translation start site. Acts as a negative regulator of inflammation in response to IL19 by promoting destabilization of pro-inflammatory transcripts (By similarity). Also acts as an inhibitor of inflammation by binding to TNF mRNA, decreasing TNF protein production. Acts as a negative regulator of AMPA receptor GRIA2/GluA2 synthesis during long-lasting synaptic potentiation of hippocampal neurons by binding to GRIA2/GluA2 mRNA, thereby inhibiting its translation. Regulates proliferation of adult neural stem cells by binding to CDKN1A mRNA and promoting its expression. Acts as a regulator of sleep and synaptic homeostasis by regulating translation of transcripts in neurons. Required for embryonic and postnatal development of muscle tissue by undergoing liquid-liquid phase separation to assemble target mRNAs into cytoplasmic ribonucleoprotein granules (By similarity). Involved in the nuclear pore complex localization to the nuclear envelope by preventing cytoplasmic aggregation of nucleoporins: acts by preventing ectopic phase separation of nucleoporins in the cytoplasm via a microtubule-dependent mechanism (By similarity). Plays a role in the stabilization of PKP2 mRNA and therefore protein abundance, via its interaction with PKP3 (By similarity). May also do the same for PKP2, PKP3 and DSP via its interaction with PKP1 (By similarity). Forms a cytoplasmic messenger ribonucleoprotein (mRNP) network by packaging long mRNAs, serving as a scaffold that recruits proteins and signaling molecules. This network facilitates signaling reactions by maintaining proximity between kinases and substrates, crucial for processes like actomyosin reorganization (By similarity).

Cellular Location

Cytoplasm, Cytoplasmic ribonucleoprotein granule {ECO:0000250|UniProtKB:Q61584}. Cytoplasm, Stress granule {ECO:0000250|UniProtKB:P51114}. Cytoplasm {ECO:0000250|UniProtKB:Q61584}. Cell projection, dendrite {ECO:0000250|UniProtKB:Q61584}. Cell projection, dendritic spine {ECO:0000250|UniProtKB:Q61584}. Cell projection, axon {ECO:0000250|UniProtKB:Q61584}. Nucleus envelope {ECO:0000250|UniProtKB:P51114}. Postsynapse {ECO:0000250|UniProtKB:Q61584}. Note=Specifically localizes to cytoplasmic ribonucleoprotein membraneless compartments (By similarity). Localizes to stress granules following phosphorylation at Ser-449 by PAK1 (By similarity). Adjacent to Z-lines in muscles (By similarity). {ECO:0000250|UniProtKB:P51114, ECO:0000250|UniProtKB:Q61584}

Images

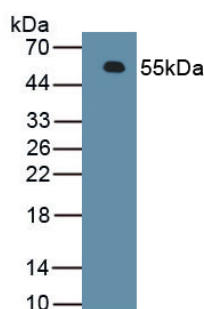


Figure. Western Blot; Sample: Recombinant FXR, Rat.