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FXR1 Antibody

Rabbit mAb
Catalog # AP92506

Product Information

Application	WB, IHC, IF, FC, ICC, IHF
Primary Accession	P51114
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Other Names	FXR1; FXR1P; hFXR1p;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	69721

Additional Information

Dilution	WB 1:500~1:2000 IHC 1:50~1:200 ICC/IF 1:50~1:200 FC 1:50
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human FXR1
Description	RNA-binding protein required for embryonic and postnatal development of muscle tissue. May regulate intracellular transport and local translation of certain mRNAs.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

Name	FXR1 {ECO:0000303|PubMed:7781595, ECO:0000312|HGNC:HGNC:4023}
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 (PubMed:17382880, PubMed:20417602, PubMed:30067974, PubMed:34731628, PubMed:35989368, PubMed:36306353). Specifically binds to AU-rich elements (AREs) in the 3'-UTR of target mRNAs (PubMed:17382880, PubMed:34731628). 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 (By similarity). 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

(PubMed:34731628). Acts as a negative regulator of inflammation in response to IL19 by promoting destabilization of pro-inflammatory transcripts (PubMed:30067974). Also acts as an inhibitor of inflammation by binding to TNF mRNA, decreasing TNF protein production (By similarity). 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 (By similarity). Regulates proliferation of adult neural stem cells by binding to CDKN1A mRNA and promoting its expression (By similarity). Acts as a regulator of sleep and synaptic homeostasis by regulating translation of transcripts in neurons (By similarity). Required for embryonic and postnatal development of muscle tissue by undergoing liquid-liquid phase separation to assemble target mRNAs into cytoplasmic ribonucleoprotein granules (PubMed:30770808). 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 (PubMed:32706158). Plays a role in the stabilization of PKP2 mRNA and therefore protein abundance, via its interaction with PKP3 (PubMed:25225333). May also do the same for PKP2, PKP3 and DSP via its interaction with PKP1 (PubMed:25225333). 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 (PubMed:39106863).

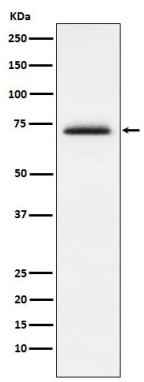
Cellular Location

Cytoplasm, Cytoplasmic ribonucleoprotein granule. Cytoplasm, Stress granule. Cytoplasm. Cell projection, dendrite {ECO:0000250|UniProtKB:Q61584}. Cell projection, dendritic spine {ECO:0000250|UniProtKB:Q61584}. Cell projection, axon {ECO:0000250|UniProtKB:Q61584}. Nucleus envelope. Postsynapse {ECO:0000250|UniProtKB:Q61584}. Note=Specifically localizes to cytoplasmic ribonucleoprotein membraneless compartments (By similarity). Localizes to stress granules following phosphorylation at Ser-420 by PAK1 (PubMed:20417602). Adjacent to Z-lines in muscles (By similarity). {ECO:0000250|UniProtKB:Q61584, ECO:0000269|PubMed:20417602}

Tissue Location

Expressed in all tissues examined including heart, brain, kidney and testis (PubMed:7781595, PubMed:9259278). In brain, present at high level in neurons and especially in the Purkinje cells at the interface between the granular layer and the molecular layer (at protein level) (PubMed:9259278).

Images



Western blot analysis of FXR1 expression in MCF7 cell lysate.

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