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Eif4e antibody - C-terminal region

Rabbit Polyclonal Antibody
Catalog # AI14335

Product Information

Application	WB
Primary Accession	P63074
Other Accession	NM_053974, NP_446426
Reactivity	Human, Mouse, Rat, Rabbit, Zebrafish, Pig, Dog, Guinea Pig, Horse, Bovine
Predicted	Human, Mouse, Rat, Zebrafish, Pig, Chicken, Dog, Guinea Pig
Host	Rabbit
Clonality	Polyclonal
Calculated MW	25053

Additional Information

Gene ID	117045
Alias Symbol	MGC93265
Other Names	Eukaryotic translation initiation factor 4E, eIF-4E, eIF4E, eIF-4F 25 kDa subunit, mRNA cap-binding protein, Eif4e
Format	Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.
Reconstitution & Storage	Add 50 ul of distilled water. Final anti-Eif4e antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at 20°C. Avoid repeat freeze-thaw cycles.
Precautions	Eif4e antibody - C-terminal region is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	Eif4e
Function	Acts in the cytoplasm to initiate and regulate protein synthesis and is required in the nucleus for export of a subset of mRNAs from the nucleus to the cytoplasm which promotes processes such as RNA capping, processing and splicing (By similarity). Component of the protein complex eIF4F, which is involved in the recognition of the mRNA cap, ATP-dependent unwinding of 5'-terminal secondary structure and recruitment of mRNA to the ribosome (By similarity). This protein recognizes and binds the 7-methylguanosine (m7G)-containing mRNA cap during an early step in the initiation of protein synthesis and facilitates ribosome binding by inducing the unwinding of the mRNAs secondary structures (PubMed:7939721). Together with EIF4G1,

antagonizes the scanning promoted by EIF1-EIF4G1 and is required for TISU translation, a process where the TISU element recognition makes scanning unnecessary (By similarity). In addition to its role in translation initiation, also acts as a regulator of translation and stability in the cytoplasm (PubMed:8558852). Component of the CYFIP1- EIF4E-FMR1 complex which binds to the mRNA cap and mediates translational repression: in the complex, EIF4E mediates the binding to the mRNA cap. Component of a multiprotein complex that sequesters and represses translation of proneurogenic factors during neurogenesis (By similarity). In P-bodies, component of a complex that mediates the storage of translationally inactive mRNAs in the cytoplasm and prevents their degradation (By similarity). May play an important role in spermatogenesis through translational regulation of stage-specific mRNAs during germ cell development (PubMed:8558852). As well as its roles in translation, also involved in mRNA nucleocytoplasmic transport (By similarity). Its role in mRNA export from the nucleus to the cytoplasm relies on its ability to bind the m7G cap of RNAs and on the presence of the 50-nucleotide EIF4E sensitivity element (4ESE) in the 3'UTR of sensitive transcripts (By similarity). Interaction with the 4ESE is mediated by LRPPRC which binds simultaneously to both EIF4E and the 4ESE, thereby acting as a platform for assembly for the RNA export complex (By similarity). EIF4E-dependent mRNA export is independent of ongoing protein or RNA synthesis and is also NFX1-independent but is XPO1-dependent with LRPPRC interacting with XPO1 to form an EIF4E- dependent mRNA export complex (By similarity). Alters the composition of the cytoplasmic face of the nuclear pore to promote RNA export by reducing RANBP2 expression, relocalizing nucleoporin NUP214 and increasing expression of RANBP1 and RNA export factors DDX19 and GLE1. Promotes the nuclear export of cyclin CCND1 mRNA (By similarity). Promotes the nuclear export of NOS2/iNOS mRNA (By similarity). Promotes the nuclear export of MDM2 mRNA (By similarity). Also promotes the export of additional mRNAs, including others involved in the cell cycle (By similarity). In the nucleus, binds to capped splice factor-encoding mRNAs and stimulates their nuclear export to enhance splice factor production by increasing their cytoplasmic availability to the translation machinery (By similarity). May also regulate splicing through interaction with the spliceosome in an RNA and m7G cap- dependent manner (By similarity). Also binds to some pre-mRNAs and may play a role in their recruitment to the spliceosome (By similarity). Promotes steady-state capping of a subset of coding and non-coding RNAs by mediating nuclear export of capping machinery mRNAs including RNMT, RNGTT and RAMAC to enhance their translation (By similarity). Stimulates mRNA 3'-end processing by promoting the expression of several core cleavage complex factors required for mRNA cleavage and polyadenylation, and may also have a direct effect through its interaction with the CPSF3 cleavage enzyme (By similarity). Rescues cells from apoptosis by promoting activation of serine/threonine- protein kinase AKT1 through mRNA export of NBS1 which potentiates AKT1 phosphorylation and also through mRNA export of AKT1 effectors, allowing for increased production of these proteins (By similarity).

Cellular Location

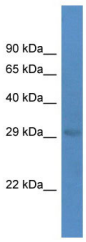
Cytoplasm, P-body {ECO:0000250|UniProtKB:P06730}. Cytoplasm {ECO:0000250|UniProtKB:P06730}. Cytoplasm, Stress granule {ECO:0000250|UniProtKB:P06730}. Nucleus {ECO:0000250|UniProtKB:P06730} Nucleus speckle {ECO:0000250|UniProtKB:P06730}. Nucleus, nuclear body {ECO:0000250|UniProtKB:P63073}. Note=Interaction with EIF4ENIF1/4E-T is required for localization to processing bodies (P-bodies). Imported in the nucleus via interaction with EIF4ENIF1/4E-T via a piggy-back mechanism (By similarity). Sequestered in the nucleus by EIF4EBP1 and EIF4EBP2 (By similarity). {ECO:0000250|UniProtKB:P06730, ECO:0000250|UniProtKB:P63073}

Tissue Location	Very high levels in post-meiotic testicular germ cells of rats of reproductive age.

References

Miyagi Y.,et al.Lab. Invest. 73:890-898(1995).
Lin T.-A.,et al.Science 266:653-656(1994).

Images



WB Suggested Anti-Eif4e Antibody Titration: 1.0 µg/ml
Positive Control: Rat Liver

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.