Datasheet for ABIN967870

anti-EIF4E antibody (AA 1-217)

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Overview

Quantity:	150 µg
Target:	EIF4E
Binding Specificity:	AA 1-217
Reactivity:	Human, Rat, Mouse, Dog, Chicken, Frog
Host:	Mouse
Clonality:	Monoclonal
Conjugate:	This EIF4E antibody is un-conjugated
Application:	Western Blotting (WB), BioImaging (BI)

Product Details

Immunogen:	Rabbit eIF-4E aa. 1-217
Clone:	87-eIF
Isotype:	IgG1
Cross-Reactivity:	Human, Chicken, Dog (Canine), Frog, Mouse (Murine), Rat (Rattus)
Characteristics:	1. Since applications vary, each investigator should titrate the reagent to obtain optimal results. 2. Please refer to us for technical protocols. 3. This antibody has been developed and certified for the bioimaging application. However, a routine bioimaging test is not performed on every lot. Researchers are encouraged to titrate the reagent for optimal performance. 4. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive

Product Details

	deposits in plumbing. 5. Source of all serum proteins is from USDA inspected abattoirs located in the United States. 6. Triton is a trademark of the Dow Chemical Company.
Purification:	The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Target Details

Target:	EIF4E
Alternative Name:	eIF-4E (EIF4E Products)
Background:	The eukaryotic translation initiation factor 4E (eIF-4E) is a 25 kDa phosphoprotein that specifically binds to the 7-methylguanosine-containing cap of mRNA. eIF-4E is the rate-limiting component for the initiation of cap-dependent translation by the eIF-4E translation initiation complex. This complex promotes the unwinding of secondary structure at the 5' untranslated region of mRNA, which is necessary to expose and locate the AUG-initiation codon. Phosphorylation of eIF-4E on Ser-209 occurs after serum treatment in CHO cells, and may regulate its function. Overexpression of eIF-4E can lead to increased cell proliferation, transformation, and tumorigenesis in nude mice. The overexpression of a Ala-53 variant of eIF-4E cannot evoke these changes, suggesting that Ser-53 on eIF-4E participates in the transfer of mRNA to the 48S initiation complexes. In cooperation with nuclear oncogenes such as c-myc or E1A, eIF-4E transforms primary cells. Other studies have demonstrated that overexpression of eIF-4E causes activation of Ras and leads to a transformed phenotype. Subsequent overexpression of GAP then causes reversion of this phenotype. The mechanism by which eIF-4E plays a role in transformation is not clear, but it is postulated that high levels of eIF-4E may lead to the translation of mRNAs that are normally translationally repressed.
Molecular Weight:	25 kDa
Pathways:	BCR Signaling

Application Details

Application Notes:	Bioimaging 1. Seed the cells in appropriate culture medium at ~10,000 cells per well in an 96-well Imaging Plate and culture overnight. 2. Remove the culture medium from the wells, and fix the cells by adding 100 myl of Fixation Buffer to each well. Incubate for 10 minutes at room temperature (RT).

Application Details

	3. Remove the fixative from the wells, and permeabilize the cells using either 90% methanol, or Triton™ X-100: a. Add 100 myl of -20°C 90% methanol to each well and incubate for 5 minutes at RT. OR b. Add 100 myl of 0.1% Triton™ X-100 to each well and incubate for 5 minutes at RT. 4. Remove the permeabilization buffer, and wash the wells twice with 100 myl of 1× PBS. 5. Remove the PBS, and block the cells by adding 100 myl of to each well. Incubate for 30 minutes at RT. 6. Remove the blocking buffer and add 50 myl of the optimally titrated primary antibody (diluted in Stain Buffer) to each well, and incubate for 1 hour at RT. 7. Remove the primary antibody, and wash the wells three times with 100 myl of 1× PBS. 8. Remove the PBS, and add the second step reagent at its optimally titrated concentration in 50 myl to each well, and incubate in the dark for 1 hour at RT. 9. Remove the second step reagent, and wash the wells three times with 100 myl of 1× PBS. 10. Remove the PBS, and counter-stain the nuclei by adding 200 myl per well of 2 myg/ml Hoechst 33342 in 1× PBS to each well at least 15 minutes before imaging. 11. View and analyze the cells on an appropriate imaging instrument.
Comment:	Related Products: ABIN967389, ABIN968533
Restrictions:	For Research Use only

Handling

Format:	Liquid
Concentration:	250 µg/mL
Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09 % sodium azide.
Preservative:	Sodium azide
Precaution of Use:	This product contains Sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.
Storage:	-20 °C
Storage Comment:	Store undiluted at -20°C.

Publications

Product cited in:	Seki, Takasu, Mandai, Nakata, Saeki, Heike, Takata, Segawa, Hanafusa, Eguchi: "Expression of eukaryotic initiation factor 4E in atypical adenomatous hyperplasia and adenocarcinoma of the human peripheral lung." in: **Clinical cancer research : an official journal of the American**

Association for Cancer Research, Vol. 8, Issue 10, pp. 3046-53, (2002) (PubMed).

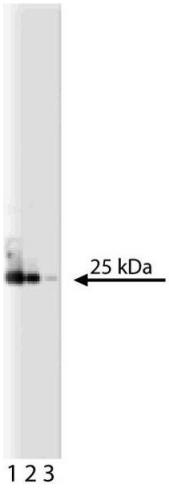
Tang, Reis, Kang, Gingras, Sonenberg, Schuman: "A rapamycin-sensitive signaling pathway contributes to long-term synaptic plasticity in the hippocampus." in: **Proceedings of the National Academy of Sciences of the United States of America**, Vol. 99, Issue 1, pp. 467-72, (2002) (PubMed).

Jiang, Ballou, Lin: "Rapamycin-insensitive regulation of 4e-BP1 in regenerating rat liver." in: **The Journal of biological chemistry**, Vol. 276, Issue 14, pp. 10943-51, (2001) (PubMed).

Rhoads: "Regulation of eukaryotic protein synthesis by initiation factors." in: **The Journal of biological chemistry**, Vol. 268, Issue 5, pp. 3017-20, (1993) (PubMed).

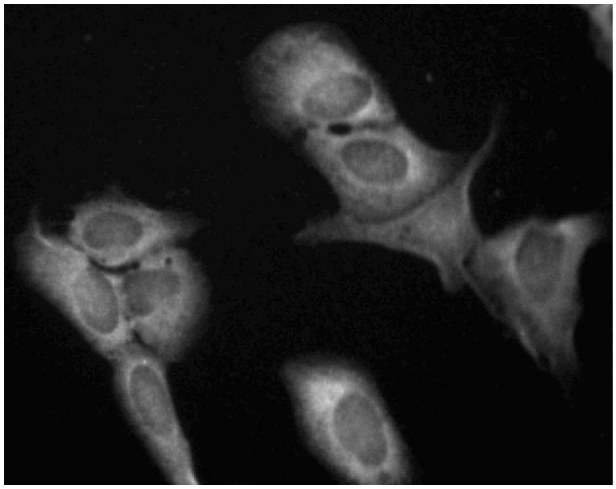
De Benedetti, Rhoads: "Overexpression of eukaryotic protein synthesis initiation factor 4E in HeLa cells results in aberrant growth and morphology." in: **Proceedings of the National Academy of Sciences of the United States of America**, Vol. 87, Issue 21, pp. 8212-6, (1990) (PubMed).

Images



Western Blotting

Image 1. Western blot analysis of eIF-4E on a A431 lysate. Lane 1: 1:500, lane 2: 1:1000, lane 3: 1:2000 dilution of the eIF-4E antibody.



Immunofluorescence

Image 2. Immunofluorescent staining of U-2 OS (ATCC HTB-96) cells. Cells were seeded in a 96 well imaging plate at ~ 10 000 cells per well. After overnight incubation, cells were stained using the alcohol perm protocol and the anti-eIF-4E antibody. The second step reagent was Alexa Fluor 488 goat anti mouse Ig (Invitrogen). Images were taken on a BD Pathway™ 855 Bioimager using a 20x objective. This antibody also stained A549 (ATCC CCL-185) and HeLa (ATCC CCL-2) cells. The Triton™ X-100 perm protocol is not recommended for use with this antibody.

Image 3.

Please check the product details page for more images. Overall 5 images are available for ABIN967870.