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Product datasheet

Recombinant Human 4E-BP2 protein ab104667

1 References　画像数 1

製品の詳細

製品名	Recombinant Human 4E-BP2 protein
精製度	> 85 % SDS-PAGE. purified by using anion-exchange chromatography (DEAE sepharose resin) and gel-filtration chromatography (Sephacryl S-200) with 20mM Tris pH 7.5, 2mM EDTA.
発現系	Escherichia coli
アクセッション番号	Q13542
タンパク質長	Full length protein
Animal free	No
由来	Recombinant
生物種	Human
配列	MGSSHHHHHHSSGLVPRGSHMSSSAGSGHQPSQSRAIPTR TVAISDAAQL PHDYCTTPGGTLFSTTPGGTRIIYDRKFLLDRRNSPMAQTPP CHLPNIPG VTSPGTLIEDSKVEVNNLNNLNNHDRKHAVGDDAQFEMDI
予測される分子量	15 kDa including tags
領域	1 to 120
タグ	His tag N-Terminus

特性

Our Abpromise guarantee covers the use of **ab104667** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

アプリケーション	SDS-PAGE Mass Spectrometry
質量分析	MALDI-TOF
製品の状態	Liquid

前処理および保存

保存方法および安定性	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw

cycles.

pH: 8.00
Constituents: 0.0154% DTT, 0.316% Tris HCl, 10% Glycerol (glycerin, glycerine), 0.58% Sodium chloride

関連情報

機能

Repressor of translation initiation involved in synaptic plasticity, learning and memory formation (By similarity). Regulates EIF4E activity by preventing its assembly into the eIF4F complex: hypophosphorylated form of EIF4EBP2 competes with EIF4G1/EIF4G3 and strongly binds to EIF4E, leading to repress translation. In contrast, hyperphosphorylated form dissociates from EIF4E, allowing interaction between EIF4G1/EIF4G3 and EIF4E, leading to initiation of translation (PubMed:25533957). EIF4EBP2 is enriched in brain and acts as a regulator of synapse activity and neuronal stem cell renewal via its ability to repress translation initiation (By similarity). Mediates the regulation of protein translation by hormones, growth factors and other stimuli that signal through the MAP kinase and mTORC1 pathways.

配列類似性

Belongs to the eIF4E-binding protein family.

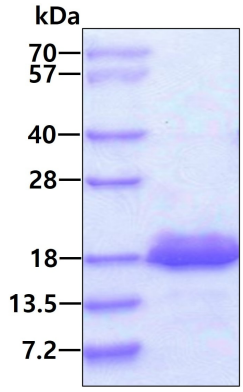
ドメイン

The TOS motif mediates interaction with RPTOR, leading to promote phosphorylation by mTORC1 complex.
Intrinsically disordered protein that undergoes folding upon phosphorylation (PubMed:25533957). Hypophosphorylated form interacts strongly with EIF4E using (1) the YXXXXLPhi motif, that undergoes a disorder-to-helix transition upon binding and (2) the secondary EIF4E binding sites (residues 78-82) (PubMed:24207126, PubMed:25533957). Phosphorylation at Thr-37 and Thr-46 induces folding of region encompassing residues from Pro-18 to Arg-62 of into a four-stranded beta-domain that sequesters the helical YXXXXLPhi motif into a buried beta-strand, blocking accessibility to EIF4E. Protein phosphorylated at Thr-37 and Thr-46 is however unstable and subsequent phosphorylation at Ser-65, Thr-70 and Ser-83 is required to stabilize the fold, decreasing affinity for EIF4E by a factor of 4000 (PubMed:24207126, PubMed:25533957).

翻訳後修飾

Phosphorylation at Thr-37, Thr-46, Ser-65, Thr-70 and Ser-83 is mediated by MTOR and corresponds to the hyperphosphorylated form: it abolishes binding to EIF4E by inducing folding of intrinsically disordered regions (PubMed:24207126, PubMed:25533957). First phosphorylated at Thr-37 and Thr-46 by MTOR, inducing folding of region encompassing residues from Pro-18 to Arg-62 of into a four-stranded beta-domain that sequesters the helical YXXXXLPhi motif into a partly buried beta-strand, blocking accessibility to EIF4E. Protein phosphorylated at Thr-37 and Thr-46 is however unstable and subsequent phosphorylation at Ser-65, Thr-70 and Ser-83 is required to stabilize the fold, decreasing affinity for EIF4E by a factor of 4000 (PubMed:24207126, PubMed:25533957). Phosphorylated in response to insulin, EGF and PDGF.
Deamidated at Asn-99 and Asn-102 to aspartate (Asp) in brain. Deamidation promotes interaction with RPTOR, subsequent phosphorylation by mTORC1 and increased translation, leading to impair kinetics of excitatory synaptic transmission. Deamidation takes place during postnatal development, when the PI3K-Akt-mTOR signaling is reduced, suggesting it acts as a compensatory mechanism to promote translation despite attenuated PI3K-Akt-mTOR signaling in neuron development. Deamidation converts Asn residues into a mixture of Asp and isoaspartate; interactions with PCMT1 is required to prevent isoaspartate accumulation and convert isoaspartate to Asp.

画像



SDS-PAGE - Recombinant Human 4E-BP2 protein (ab104667)

SDS-PAGE of ab104667 (3µg) under reducing condition and visualized by coomassie blue stain.

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