

GRB2 Antibody (Y209)

Affinity Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP6283a

Product Information

Application	IHC-P, WB, E
Primary Accession	P62993
Other Accession	P62994 , Q60631 , Q07883 , Q6GPJ9 , P87379
Reactivity	Human, Rat, Mouse
Predicted	Xenopus, Chicken, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB11305-11306
Calculated MW	25206
Antigen Region	187-216

Additional Information

Gene ID	2885
Other Names	Growth factor receptor-bound protein 2, Adapter protein GRB2, Protein Ash, SH2/SH3 adapter GRB2, GRB2, ASH
Target/Specificity	This GRB2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 187-216 amino acids from human GRB2.
Dilution	IHC-P~~1:100~500 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	GRB2 Antibody (Y209) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	GRB2
Synonyms	ASH

Function

Non-enzymatic adapter protein that plays a pivotal role in precisely regulated signaling cascades from cell surface receptors to cellular responses, including signaling transduction and gene expression (PubMed:[11726515](#), PubMed:[37626338](#)). Thus, participates in many biological processes including regulation of innate and adaptive immunity, autophagy, DNA repair or necroptosis (PubMed:[35831301](#), PubMed:[37626338](#), PubMed:[38182563](#)). Controls signaling complexes at the T-cell antigen receptor to facilitate the activation, differentiation, and function of T-cells (PubMed:[36864087](#), PubMed:[9489702](#)). Mechanistically, engagement of the TCR leads to phosphorylation of the adapter protein LAT, which serves as docking site for GRB2 (PubMed:[9489702](#)). In turn, GRB2 establishes a connection with SOS1 that acts as a guanine nucleotide exchange factor and serves as a critical regulator of KRAS/RAF1 leading to MAPKs translocation to the nucleus and activation (PubMed:[12171928](#), PubMed:[25870599](#)). Functions also a role in B-cell activation by amplifying Ca(2+) mobilization and activation of the ERK MAP kinase pathway upon recruitment to the phosphorylated B-cell antigen receptor (BCR) (PubMed:[25413232](#), PubMed:[29523808](#)). Plays a role in switching between autophagy and programmed necrosis upstream of EGFR by interacting with components of necrosomes including RIPK1 and with autophagy regulators SQSTM1 and BECN1 (PubMed:[35831301](#), PubMed:[38182563](#)). Regulates miRNA biogenesis by forming a functional ternary complex with AGO2 and DICER1 (PubMed:[37328606](#)). Functions in the replication stress response by protecting DNA at stalled replication forks from MRE11-mediated degradation. Mechanistically, inhibits RAD51 ATPase activity to stabilize RAD51 on stalled replication forks (PubMed:[38459011](#)). Additionally, directly recruits and later releases MRE11 at DNA damage sites during the homology-directed repair (HDR) process (PubMed:[34348893](#)).

Cellular Location

Nucleus. Cytoplasm. Endosome. Golgi apparatus
{ECO:0000250|UniProtKB:Q60631}

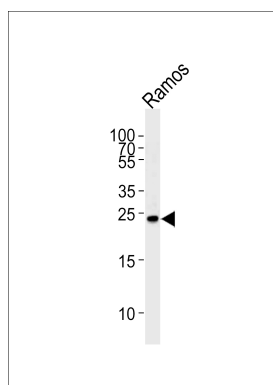
Background

GRB2 binds the epidermal growth factor receptor and contains one SH2 domain and two SH3 domains. Its two SH3 domains direct complex formation with proline-rich regions of other proteins, and its SH2 domain binds tyrosine phosphorylated sequences. This gene is similar to the Sem5 gene of *C.elegans*, which is involved in the signal transduction pathway.

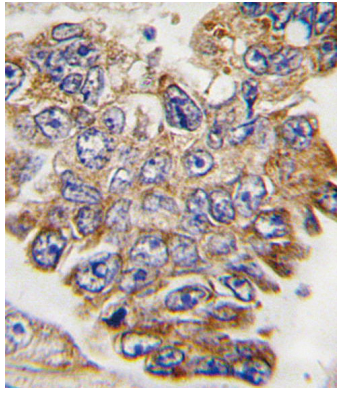
References

Kondo,A., J. Biol. Chem. 283 (3), 1428-1436 (2008) Morimatsu,M., Proc. Natl. Acad. Sci. U.S.A. 104 (46), 18013-18018 (2007) Martinez,N., Cell. Signal. 19 (11), 2277-2285 (2007)

Images



Western blot analysis of lysate from Ramos cell line, using GRB2 Antibody (pY209)(Cat. #AP6283a). AP6283a was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysate at 35ug.



Formalin-fixed and paraffin-embedded human lung carcinoma tissue reacted with GRB2 Antibody (Y209), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

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