10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

GRB2 Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AP52729

Product Information

Application	WB
Primary Accession	P62993
Reactivity	Human, Mouse
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Calculated MW	25206

Additional Information

Gene ID	2885
Other Names	Abundant SRC homology; Adapter protein GRB2; ASH; Ash protein; EGFRBP GRB2; Epidermal growth factor receptor binding protein; Epidermal growth factor receptor binding protein GRB2; GRB 2; GRB2 adapter protein; Grb2; GRB2_HUMAN; Grb3 3; Growth factor receptor bound protein 2; Growth factor receptor bound protein 3; Growth factor receptor-bound protein 2; HT027; MST084; MSTP084; NCKAP2; OTTHUMP00000166096; OTTHUMP00000166097; OTTHUMP00000166098; Protein ASH; SEM5; SH2/SH3 adapter GRB2.
Dilution	WB~~1:1000
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide, pH 7.3.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

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 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}

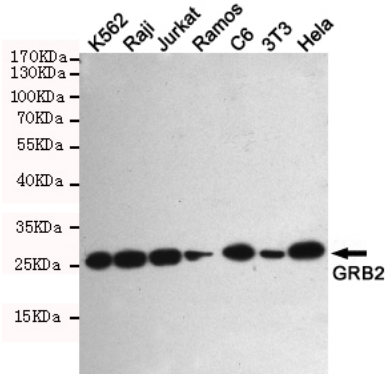
Background

Adapter protein that provides a critical link between cell surface growth factor receptors and the Ras signaling pathway.

References

Lowenstein E.J.,et al.Cell 70:431-442(1992).
Matuoka K.,et al.Proc. Natl. Acad. Sci. U.S.A. 89:9015-9019(1992).
Fath I.,et al.Science 264:971-974(1994).
Bochmann H.,et al.Genomics 56:203-207(1999).
Puhl H.L. III,et al.Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases.

Images



Western blot detection of GRB2 in K562,Raji,Jurkat,Ramos,C6,3T3 and Hela cell lysates using GRB2 mouse mAb (1:1000 diluted).Predicted band size:25KDa.Observed band size:25KDa.