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GRB2 Antibody

Rabbit mAb
Catalog # AP93271

Product Information

Application	WB, IHC, IF, ICC, IHF
Primary Accession	P62993
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Other Names	ASH; EGFRBP GRB2; Grb2; Growth factor receptor bound protein 2; Growth factor receptor bound protein 3; HT027; NCKAP2; SEM5;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	25206

Additional Information

Dilution	WB 1:500~1:2000 IHC 1:50~1:200 ICC/IF 1:50~1:200
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human GRB2
Description	Adapter protein that provides a critical link between cell surface growth factor receptors and the Ras signaling pathway. Isoform GRB3-3 does not bind to phosphorylated epidermal growth factor receptor (EGFR) but inhibits EGF-induced transactivation of a RAS-responsive element.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

Name	GRB2 (HGNC:4566)
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:11016927, 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}

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