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

KD-Validated Anti-Dynamin 2 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1504

Product Information

Application	WB, FC
Primary Accession	P50570
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	23GB5170
Calculated MW	98064
Gene Name	DNM2
Aliases	DNM2; Dynamin 2; DYN2; DI-CMTB; CMTDIB; CMTDI1; DYNII; CMT2M; Dynamin II; EC 3.6.5.5; Dynamin-2; Cytoskeletal Protein; LCCS5
Immunogen	A synthesized peptide derived from human Dynamin 2

Additional Information

Gene ID	1785
Other Names	Dynamin-2, 3.6.5.5, Dynamin 2, Dynamin II, DNM2 (HGNC:2974), DYN2

Protein Information

Name	DNM2 (HGNC:2974)
Synonyms	DYN2
Function	Catalyzes the hydrolysis of GTP and utilizes this energy to mediate vesicle scission at plasma membrane during endocytosis and filament remodeling at many actin structures during organization of the actin cytoskeleton (PubMed:15731758, PubMed:19605363, PubMed:19623537, PubMed:33713620, PubMed:34744632). Plays an important role in vesicular trafficking processes, namely clathrin-mediated endocytosis (CME), exocytic and clathrin-coated vesicle from the trans-Golgi network, and PDGF stimulated macropinocytosis (PubMed:15731758, PubMed:19623537, PubMed:33713620). During vesicular trafficking process, associates to the membrane, through lipid binding, and self-assembles into ring-like structure through oligomerization to form a helical polymer around the vesicle membrane and leading to vesicle scission (PubMed:17636067, PubMed:34744632, PubMed:36445308). Plays a role in organization of the actin cytoskeleton by mediating arrangement of stress fibers and actin bundles in podocytes (By similarity). During organization of the actin cytoskeleton, self-assembles into ring-like structure that directly bundles actin

filaments to form typical membrane tubules decorated with dynamin spiral polymers (By similarity). Self-assembly increases GTPase activity and the GTP hydrolysis causes the rapid depolymerization of dynamin spiral polymers, and results in dispersion of actin bundles (By similarity). Remodels, through its interaction with CTTN, bundled actin filaments in a GTPase-dependent manner and plays a role in orchestrating the global actomyosin cytoskeleton (PubMed:19605363). The interaction with CTTN stabilizes the interaction of DNM2 and actin filaments and stimulates the intrinsic GTPase activity that results in actin filament-barbed ends and increases the sensitivity of filaments in bundles to the actin depolymerizing factor, CFL1 (By similarity). Plays a role in the autophagy process, by participating in the formation of ATG9A vesicles destined for the autophagosomes through its interaction with SNX18 (PubMed:29437695), by mediating recycling endosome scission leading to autophagosome release through MAP1LC3B interaction (PubMed:29437695, PubMed:32315611). Also regulates maturation of apoptotic cell corpse-containing phagosomes by recruiting PIK3C3 to the phagosome membrane (By similarity). Also plays a role in cytokinesis (By similarity). May participate in centrosome cohesion through its interaction with TUBG1 (By similarity). Plays a role in the regulation of neuron morphology, axon growth and formation of neuronal growth cones (By similarity). Involved in membrane tubulation (PubMed:24135484).

Cellular Location

Cytoplasm, cytoskeleton. Cytoplasmic vesicle, clathrin-coated vesicle. Cell projection, uropodium. Endosome Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome, centriole Recycling endosome. Cell projection, phagocytic cup {ECO:0000250|UniProtKB:P39054}. Cytoplasmic vesicle, phagosome membrane {ECO:0000250|UniProtKB:P39054}; Peripheral membrane protein {ECO:0000250|UniProtKB:P39054}. Cell projection, podosome {ECO:0000250|UniProtKB:P39054}. Cytoplasm {ECO:0000250|UniProtKB:P39052}. Cell junction {ECO:0000250|UniProtKB:P39052}. Postsynaptic density {ECO:0000250|UniProtKB:P39052}. Synapse, synaptosome {ECO:0000250|UniProtKB:P39052}. Midbody {ECO:0000250|UniProtKB:P39052} Membrane, clathrin-coated pit {ECO:0000250|UniProtKB:P39052} Note=Localized in recycling endosomes fragment to release nascent autophagosomes (PubMed:32315611). Co-localizes with PIK3C3 and RAB5A to the nascent phagosome. Localized at focal ahesion site upon induction of focal adhesions and stress-fiber formation, when interacts with SDC4 (By similarity). Exists as a dynamic component of the centrosome Associates with clathrin-coated vesicles at both the plasma membrane and the trans-Golgi network (TGN) (By similarity) {ECO:0000250|UniProtKB:P39052, ECO:0000250|UniProtKB:P39054, ECO:0000269|PubMed:32315611}

Tissue Location

Widely expressed (PubMed:7590285). Expressed in skeletal muscle and the peripheral nerve (PubMed:19623537)

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