

DIAPH1 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP20655a

Product Information

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|-------------------|------------------------|
| Application | WB, E |
| Primary Accession | O60610 |
| Reactivity | Human, Mouse |
| Host | Rabbit |
| Clonality | Polyclonal |
| Isotype | Rabbit IgG |
| Clone Names | RB30760 |
| Calculated MW | 141347 |

Additional Information

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| Gene ID | 1729 |
| Other Names | Protein diaphanous homolog 1, Diaphanous-related formin-1, DRF1, DIAPH1, DIAP1 |
| Target/Specificity | This DIAPH1 antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 18-52 amino acids from the N-terminal region of human DIAPH1. |
| Dilution | WB~~1:500-1:1000 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 | DIAPH1 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures. |

Protein Information

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|----------|---|
| Name | DIAPH1 |
| Synonyms | DIAP1 |
| Function | Actin nucleation and elongation factor required for the assembly of F-actin structures, such as actin cables and stress fibers (By similarity). Binds to the barbed end of the actin filament and slows down actin polymerization and |

depolymerization (By similarity). Required for cytokinesis, and transcriptional activation of the serum response factor (By similarity). DFR proteins couple Rho and Src tyrosine kinase during signaling and the regulation of actin dynamics (By similarity). Functions as a scaffold protein for MAPRE1 and APC to stabilize microtubules and promote cell migration (By similarity). Has neurite outgrowth promoting activity. Acts in a Rho-dependent manner to recruit PFY1 to the membrane (By similarity). In hair cells, it may play a role in the regulation of actin polymerization in hair cells (PubMed:[20937854](#), PubMed:[21834987](#), PubMed:[26912466](#)). The MEMO1-RHOA- DIAPH1 signaling pathway plays an important role in ERBB2-dependent stabilization of microtubules at the cell cortex (PubMed:[20937854](#), PubMed:[21834987](#)). It controls the localization of APC and CLASP2 to the cell membrane, via the regulation of GSK3B activity (PubMed:[20937854](#), PubMed:[21834987](#)). In turn, membrane-bound APC allows the localization of the MACF1 to the cell membrane, which is required for microtubule capture and stabilization (PubMed:[20937854](#), PubMed:[21834987](#)). Plays a role in the regulation of cell morphology and cytoskeletal organization. Required in the control of cell shape (PubMed:[20937854](#), PubMed:[21834987](#)). Plays a role in brain development (PubMed:[24781755](#)). Also acts as an actin nucleation and elongation factor in the nucleus by promoting nuclear actin polymerization inside the nucleus to drive serum-dependent SRF-MRTFA activity (By similarity).

Cellular Location

Cell membrane {ECO:0000250|UniProtKB:O08808}. Cell projection, ruffle membrane {ECO:0000250|UniProtKB:O08808} Cytoplasm, cytoskeleton. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, spindle. Cytoplasm {ECO:0000250|UniProtKB:O08808}. Nucleus {ECO:0000250|UniProtKB:O08808} Note=Membrane ruffles, especially at the tip of ruffles, of motile cells. {ECO:0000250|UniProtKB:O08808}

Tissue Location

Expressed in brain, heart, placenta, lung, kidney, pancreas, liver, skeletal muscle and cochlea. Expressed in platelets (PubMed:[26912466](#)).

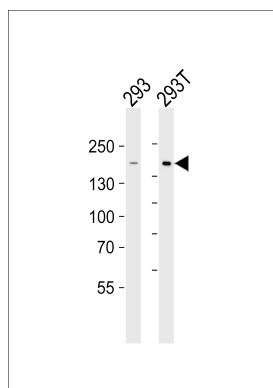
Background

Acts in a Rho-dependent manner to recruit PFY1 to the membrane. Required for the assembly of F-actin structures, such as actin cables and stress fibers. Nucleates actin filaments. Binds to the barbed end of the actin filament and slows down actin polymerization and depolymerization. Required for cytokinesis, and transcriptional activation of the serum response factor. DFR proteins couple Rho and Src tyrosine kinase during signaling and the regulation of actin dynamics. Functions as a scaffold protein for MAPRE1 and APC to stabilize microtubules and promote cell migration (By similarity). Has neurite outgrowth promoting activity (By similarity). In hair cells, it may play a role in the regulation of actin polymerization in hair cells. The MEMO1-RHOA- DIAPH1 signaling pathway plays an important role in ERBB2- dependent stabilization of microtubules at the cell cortex. It controls the localization of APC and CLASP2 to the cell membrane, via the regulation of GSK3B activity. In turn, membrane-bound APC allows the localization of the MACF1 to the cell membrane, which is required for microtubule capture and stabilization. Plays a role in the regulation of cell morphology and cytoskeletal organization. Required in the control of cell shape.

References

- Lynch E.D.,et al.Science 278:1315-1318(1997).
 Totoki Y.,et al.Submitted (MAR-2005) to the EMBL/GenBank/DDBJ databases.
 Schmutz J.,et al.Nature 431:268-274(2004).
 Ota T.,et al.Nat. Genet. 36:40-45(2004).
 Morita K.,et al.J. Dermatol. Sci. 44:11-20(2006).

Images



Western blot analysis of lysates from 293, 293T cell line (from left to right), using DIAPH1 Antibody (N-term)(Cat. #AP20655a). AP20655a was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysates at 35ug per lane.

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