

## **DIAPH1 Blocking Peptide (N-term)**

Synthetic peptide Catalog # BP20655a

# **Specification**

### **DIAPH1 Blocking Peptide (N-term) - Product Information**

**Primary Accession** 

060610

# **DIAPH1 Blocking Peptide (N-term) - Additional Information**

**Gene ID 1729** 

#### **Other Names**

Protein diaphanous homolog 1, Diaphanous-related formin-1, DRF1, DIAPH1, DIAP1

### Target/Specificity

The synthetic peptide sequence is selected from aa 18-32 of HUMAN DIAPH1

#### **Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

# **Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

### **Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

### **DIAPH1 Blocking Peptide (N-term) - Protein Information**

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 hear cells, it may play a role in the regulation of actin polymerization in hair cells (PubMed:<a

href="http://www.uniprot.org/citations/20937854" target="\_blank">20937854</a>, PubMed:<a href="http://www.uniprot.org/citations/21834987" target="\_blank">21834987</a>, PubMed:<a href="http://www.uniprot.org/citations/26912466" target="\_blank">26912466</a>). The MEMO1-RHOA- DIAPH1 signaling pathway plays an important role in ERBB2-dependent



Tel: 858.875.1900 Fax: 858.875.1999

stabilization of microtubules at the cell cortex (PubMed:<a

href="http://www.uniprot.org/citations/20937854" target=" blank">20937854</a>, PubMed:<a href="http://www.uniprot.org/citations/21834987" target="blank">21834987</a>). It controls the localization of APC and CLASP2 to the cell membrane, via the regulation of GSK3B activity (PubMed:<a href="http://www.uniprot.org/citations/20937854" target=" blank">20937854</a>, PubMed:<a href="http://www.uniprot.org/citations/21834987" target="blank">21834987</a>). In turn, membrane-bound APC allows the localization of the MACF1 to the cell membrane, which is required for microtubule capture and stabilization (PubMed:<a

href="http://www.uniprot.org/citations/20937854" target="\_blank">20937854</a>, PubMed:<a href="http://www.uniprot.org/citations/21834987" target="\_blank">21834987</a>). Plays a role in the regulation of cell morphology and cytoskeletal organization. Required in the control of cell shape (PubMed:<a href="http://www.uniprot.org/citations/20937854"

target=" blank">20937854</a>, PubMed:<a href="http://www.uniprot.org/citations/21834987" target="blank">21834987</a>). Plays a role in brain development (PubMed:<a href="http://www.uniprot.org/citations/24781755" target=" blank">24781755</a>). 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:008808}. Cell projection, ruffle membrane {ECO:0000250|UniProtKB:O08808} Cytoplasm, cytoskeleton. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, spindle. Cytoplasm {ECO:0000250|UniProtKB:008808}. Nucleus {ECO:0000250|UniProtKB:008808} Note=Membrane ruffles, especially at the tip of ruffles, of motile cells. {ECO:0000250|UniProtKB:008808}

#### **Tissue Location**

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

### **DIAPH1 Blocking Peptide (N-term) - Protocols**

Provided below are standard protocols that you may find useful for product applications.

### • Blocking Peptides

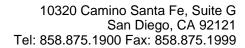
**DIAPH1 Blocking Peptide (N-term) - Images** 

### DIAPH1 Blocking Peptide (N-term) - 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 hear 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.

## **DIAPH1 Blocking Peptide (N-term) - 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).