

**EPAC1 Antibody**  
**Catalog # ASC11418****Specification**

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**EPAC1 Antibody - Product Information**

Application	WB, IHC, IF
Primary Accession	<a href="#">O95398</a>
Other Accession	<a href="#">NP_001092001</a> , <a href="#">10411</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Application Notes	EPAC1 antibody can be used for detection of EPAC1 by Western blot at 1 µg/mL. Antibody can also be used for immunohistochemistry starting at 2.5 µg/mL. For immunofluorescence start at 20 µg/mL.

**EPAC1 Antibody - Additional Information**Gene ID **10411****Target/Specificity**

EPAC1 antibody was raised against an 18 amino acid synthetic peptide near the amino terminus of human EPAC1.<br><br>The immunogen is located within amino acids 60 - 110 of EPAC1.

**Reconstitution & Storage**

EPAC1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

**Precautions**

EPAC1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**EPAC1 Antibody - Protein Information****Name** RAPGEF3**Synonyms** CGEF1, EPAC, EPAC1**Function**

Guanine nucleotide exchange factor (GEF) for RAP1A and RAP2A small GTPases that is activated by binding cAMP. Through simultaneous binding of PDE3B to RAPGEF3 and PIK3R6 is assembled in a signaling complex in which it activates the PI3K gamma complex and which is involved in angiogenesis. Plays a role in the modulation of the cAMP- induced dynamic control of endothelial barrier function through a pathway that is independent on Rho-mediated signaling. Required for the actin rearrangement at cell-cell junctions, such as stress fibers and junctional actin.

**Cellular Location**

Endomembrane system

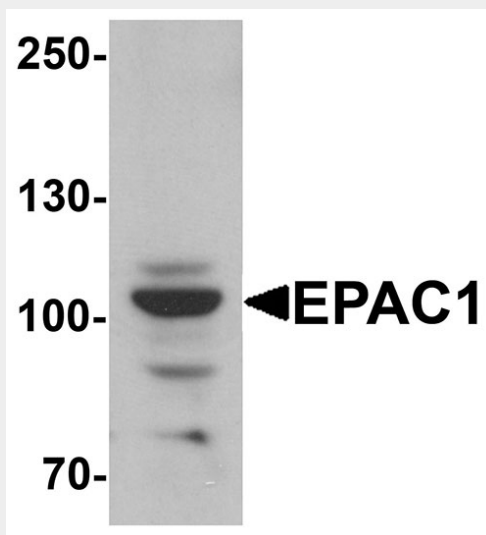
**Tissue Location**

Widely expressed with highest levels in adult kidney, heart, thyroid and brain, and fetal kidney

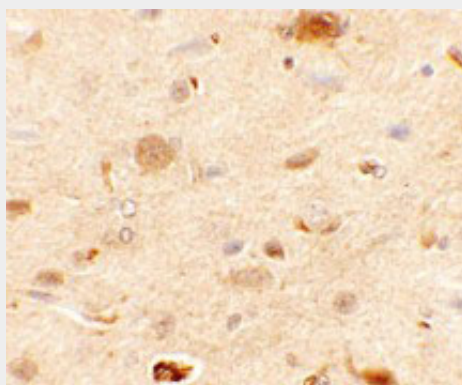
**EPAC1 Antibody - Protocols**

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

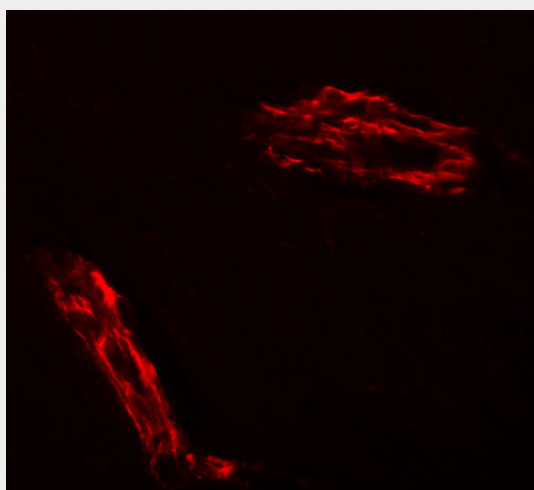
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

**EPAC1 Antibody - Images**

Western blot analysis of EPAC1 in rat skeletal muscle tissue lysate with EPAC1 antibody at 1  $\mu$ g/mL.



Immunohistochemistry of EPAC1 in rat brain tissue with EPAC1 antibody at 2.5 µg/mL.



Immunofluorescence of EPAC1 in rat brain tissue with EPAC1 antibody at 20 µg/mL.

### **EPAC1 Antibody - Background**

EPAC1 Antibody: EPAC1, also known as Rap guanine nuclear exchange factor 3 and cAMPGEF-I, is widely expressed but most prominently in brain, heart, kidney, pancreas, spleen, ovary, thyroid and spinal cord. EPAC1 is a cAMP-binding protein with intrinsic guanine nuclear exchange factor activity that couples cAMP production to the activation of Rap, a GTPase belonging to the Ras family. This activation of Rap influences numerous cellular processes such as integrin-mediated cell adhesion, vascular endothelial barrier formation, and cardiac myocyte gap junction formation. Recently, EPAC1 has been suggested to also be involved in the cAMP-dependent regulation of ion channel formation, intracellular Ca<sup>++</sup> signalling, ion transporter activity, and exocytosis.

### **EPAC1 Antibody - References**

de Rooij J, Zwartkruis FJ, Verheijen MH, et al. Epac is a Rap1 guanine-nucleotide-exchange factor directly activated by cyclic AMP. *Nature* 1998; 396:474-7.  
Bos JL. Epac: a new cAMP target and new avenues. *Hum. Immunol.* 2004; 65:282-90.  
Holz GG, Kang G, Harbeck M, et al. Cell physiology of cAMP sensor Epac. *J. Physiol.* 2006; 577:5-15.