

Epac2 (H-220): sc-25633

BACKGROUND

3',5' cyclic adenosine monophosphate (cAMP)-regulated guanine nucleotide exchange factors Epac1 (cAMP-GEFI) and Epac2 (cAMP-GEFII) activate the ras family GTPases Rap1 and Rap2 by promoting GTP binding in a cAMP-dependent manner. Eukaryotic cAMP is a second messenger that induces physiological responses such as gene expression, growth, differentiation, secretion and neurotransmission. Human EPAC2 contains at least 31 exons and maps to chromosome 2q31.1. The 4.4-kb Epac2 transcript is prominent in brain and adrenal gland. Within the brain, expression is strong in cortex, occipital pole, frontal lobe, temporal lobe, amygdala, putamen, hippocampus and cerebellum.

REFERENCES

1. Kawasaki, H., et al. 1998. A family of cAMP-binding proteins that directly activate Rap1. *Science* 282: 2275-2279.
2. de Rooij, J., et al. 2000. Mechanism of regulation of the Epac family of cAMP-dependent RapGEFs. *J. Biol. Chem.* 275: 20829-20836.

CHROMOSOMAL LOCATION

Genetic locus: RAPGEF4 (human) mapping to 2q31.1; Rapgef4 (mouse) mapping to 2 C3.

SOURCE

Epac2 (H-220) is a rabbit polyclonal antibody raised against amino acids 1-220 mapping at the N-terminus of Epac2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Epac2 (H-220) is recommended for detection of Epac2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Epac2 (H-220) is also recommended for detection of Epac2 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for Epac2 siRNA (h): sc-41702, Epac2 siRNA (m): sc-41703, Epac2 shRNA Plasmid (h): sc-41702-SH, Epac2 shRNA Plasmid (m): sc-41703-SH, Epac2 shRNA (h) Lentiviral Particles: sc-41702-V and Epac2 shRNA (m) Lentiviral Particles: sc-41703-V.

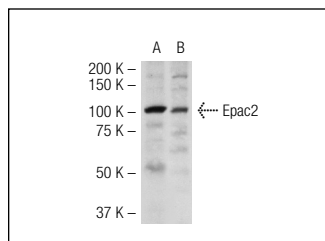
Molecular Weight of Epac2: 126 kDa.

Positive Controls: Mouse cerebellum extract: sc-2403, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

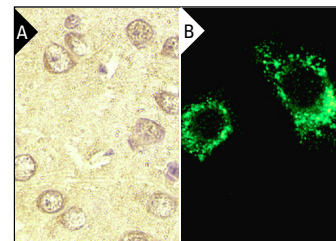
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



Epac2 (H-220): sc-25633. Western blot analysis of Epac2 expression in mouse brain (A) and mouse cerebellum (B) tissue extracts.



Epac2 (H-220): sc-25633. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse brain tissue showing membrane localization (A). Immunofluorescence staining of methanol-fixed BC₃H1 cells showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

1. Potapova, I.A., et al. 2007. Voltage-gated ion channel Kv4.3 is associated with Rap guanine nucleotide exchange factors and regulates angiotensin receptor type 1 signaling to small G-protein Rap. *FEBS J.* 274: 4375-4384.
2. Aivatiadou, E., et al. 2009. cAMP-Epac2-mediated activation of Rap1 in developing male germ cells: RA-RhoGAP as a possible direct down-stream effector. *Mol. Reprod. Dev.* 76: 407-416.
3. Aumo, L., et al. 2010. Functional roles of protein kinase A (PKA) and exchange protein directly activated by 3',5'-cyclic adenosine 5'-monophosphate (cAMP) 2 (EPAC2) in cAMP-mediated actions in adrenocortical cells. *Endocrinology* 151: 2151-2161.
4. Yoshie, M., et al. 2010. Possible role of the exchange protein directly activated by cyclic AMP (Epac) in the cyclic AMP-dependent functional differentiation and syncytialization of human placental BeWo cells. *Hum. Reprod.* 25: 2229-2238.
5. McPartlin, L.A., et al. 2011. Guanine-nucleotide exchange factors (RAPGEF3/RAPGEF4) induce sperm membrane depolarization and acrosomal exocytosis in capacitated stallion sperm. *Biol. Reprod.* 85: 179-188.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

MONOS
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Try **Epac2 (A-7): sc-28326** or **Epac2 (C-6): sc-390690**, our highly recommended monoclonal alternatives to Epac2 (H-220).