

EPCR (RCR-49): sc-53982

BACKGROUND

Thrombomodulin™ is an endothelial specific receptor that forms a complex with thrombin, a protein with procoagulant, inflammatory and anticoagulant effects. The TM/thrombin complex activates protein C (PC) to generate activated protein C (APC) and initiate the APC anticoagulant pathway. APC attenuates thrombin formation through the inactivation, by limited proteolysis, of two significant cofactors of blood clot formation, Factor Va and Factor VIIIa. This process is augmented by the activity of the endothelial cell Protein C receptor (EPCR), which binds both PC and APC with high affinity. The EPCR gene maps to human chromosome 20q11.22 and encodes an anticoagulant that is preferentially expressed on large blood vessel endothelium in the heart and lung with some expression in capillaries in the lung and skin. EPCR, also designated CCD41 in mouse, is a member of the major histocompatibility complex and displays significant homology to CD1. Soluble plasma EPCR is thought to inhibit the membrane-bound EPCR activation of the APC pathway.

REFERENCES

1. Fukudome, K., et al. 1995. Molecular cloning and expression of murine and bovine endothelial cell protein C/activated protein C receptor (EPCR). The structural and functional conservation in human, bovine, and murine EPCR. *J. Biol. Chem.* 270: 5571-5577.
2. Fukudome, K., et al. 1996. The endothelial cell protein C receptor. Cell surface expression and direct ligand binding by the soluble receptor. *J. Biol. Chem.* 271: 17491-17498.
3. Kurosawa, S., et al. 1997. Identification of functional endothelial protein C receptor in human plasma. *J. Clin. Invest.* 100: 411-418.
4. Fukudome, K., et al. 1998. Activation mechanism of anticoagulant protein C in large blood vessels involving the endothelial cell protein C receptor. *J. Exp. Med.* 187: 1029-1035.
5. Hayashi, T., et al. 1999. Organization and chromosomal localization of the human endothelial protein C receptor gene. *Gene* 238: 367-373.
6. Ye, X., et al. 1999. The endothelial cell protein C receptor (EPCR) functions as a primary receptor for protein C activation on endothelial cells in arteries, veins and capillaries. *Biochem. Biophys. Res. Commun.* 259: 671-677.
7. Liaw, P.C., et al. 2000. Mechanisms by which soluble endothelial cell protein C receptor modulates protein C and activated protein C function. *J. Biol. Chem.* 275: 5447-5452.
8. Esmon, C.T. 2001. The normal role of activated protein C in maintaining homeostasis and its relevance to critical illness. *Crit. Care* 5: S7-S12.
9. Castellino, F.J. 2001. Gene targeting in hemostasis: protein C. *Front. Biosci.* 6: 807-819.

CHROMOSOMAL LOCATION

Genetic locus: PROCR (human) mapping to 20q11.22.

SOURCE

EPCR (RCR-49) is a rat monoclonal antibody raised against transfected EPCR-positive RE-1 cells of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

EPCR (RCR-49) is available conjugated to agarose (sc-53982 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to either phycoerythrin (sc-53982 PE), fluorescein (sc-53982 FITC), Alexa Fluor® 488 (sc-53982 AF488), Alexa Fluor® 546 (sc-53982 AF546), Alexa Fluor® 594 (sc-53982 AF594) or Alexa Fluor® 647 (sc-53982 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53982 AF680) or Alexa Fluor® 790 (sc-53982 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

EPCR (RCR-49) is recommended for detection of EPCR of human origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and flow cytometry (1 µg per 1 x 10⁶ cells).

Suitable for use as control antibody for EPCR siRNA (h): sc-39932, EPCR shRNA Plasmid (h): sc-39932-SH and EPCR shRNA (h) Lentiviral Particles: sc-39932-V.

Molecular Weight (predicted) of EPCR: 27 kDa.

Molecular Weight (observed) of EPCR: 32 kDa.

SELECT PRODUCT CITATIONS

1. Fager, A.M., et al. 2018. Human platelets express endothelial protein C receptor, which can be utilized to enhance localization of factor VIIa activity. *J. Thromb. Haemost.* 16: 1817-1829.
2. Basu, S., et al. 2020. Role of thrombomodulin expression on hematopoietic stem cells. *J. Thromb. Haemost.* 18: 123-135.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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