

## ETAR (R-19): sc-21194

### BACKGROUND

Endothelin receptor A (ETAR), also known as EDNRA, ET1 receptor, ETA, EDN1 and ET-AR, is a member of the guanine-binding regulatory protein-coupled receptor family. ETAR binds endothelins and has the highest affinity for its ligand, ET1, as compared to the ETBR receptor. Both ET receptors, ETAR and ETBR, are activated by ET1, which results in inhibition of active lens sodium-potassium transport. Activation of the ET receptors also causes an increase in cytoplasmic calcium concentration in cultured lens epithelial cells. In addition, ETAR induces arachidonic acid accumulation. ETAR has seven hydrophobic transmembrane domains and is expressed in aorta, lung, atrium, kidney, placenta and prostate. Specifically, placental vascular smooth muscle cells (PVSMSs) exclusively express ETAR.

### REFERENCES

- Adachi, M., et al. 1991. Cloning and characterization of cDNA encoding human A-type endothelin receptor. *Biochem. Biophys. Res. Commun.* 180: 1265-1272.
- Lin, H., et al. 1991. Cloning and functional expression of a vascular smooth muscle endothelin 1 receptor. *Proc. Natl. Acad. Sci. USA* 88: 3185-3189.
- Kobayashi, S., et al. 1994. Binding and functional properties of endothelin receptor subtypes in the human prostate. *Mol. Pharmacol.* 45: 306-311.
- Miyamoto, Y., et al. 1996. Alternative RNA splicing of the human endothelin-A receptor generates multiple transcripts. *Biochem. J.* 313: 795-801.
- Okafor, M., et al. 2001. The inhibitory influence of endothelin on active sodium-potassium transport in porcine lens. *Invest. Ophthalmol. Vis. Sci.* 42: 1018-1023.

### CHROMOSOMAL LOCATION

Genetic locus: EDNRA (human) mapping to 4q31.22, EDNRB (human) mapping to 13q22; Ednra (mouse) mapping to 8 C2, Ednrb (mouse) mapping to 14 E2.3.

### SOURCE

ETAR (R-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ETAR 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.

Blocking peptide available for competition studies, sc-21194 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### 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.

### APPLICATIONS

ETAR (R-19) is recommended for detection of ETAR and ETBR of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ETAR (R-19) is also recommended for detection of ETAR and ETBR in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of ETAR: 69 kDa.

Positive Controls: rat testis extract: sc-2400, mouse lung extract: sc-2390 or mouse heart extract: sc-2254.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### SELECT PRODUCT CITATIONS

- Jamali, R., et al. 2006. Involvement of protein kinases on the upregulation of endothelin receptors in rat basilar and mesenteric arteries. *Exp. Biol. Med.* 231: 403-411.
- Granström, B.W., et al. 2006. Smoking particles enhance endothelin A and endothelin B receptor-mediated contractions by enhancing translation in rat bronchi. *BMC Pulm. Med.* 6: 6.
- Stenman, E., et al. 2007. Cooperative effect of angiotensin AT<sub>1</sub> and endothelin ET<sub>A</sub> receptor antagonism limits the brain damage after ischemic stroke in rat. *Eur. J. Pharmacol.* 570: 142-148.
- Johnsson, E., et al. 2008. Enhanced expression of contractile endothelin ET<sub>B</sub> receptors in rat coronary artery after organ culture. *Eur. J. Pharmacol.* 582: 94-101.
- Maddahi, A., et al. 2008. Enhanced expressions of microvascular smooth muscle receptors after focal cerebral ischemia occur via the MAPK MEK/ERK pathway. *BMC Neurosci.* 9: 85.
- Dimitrijevic, I., et al. 2009. Increased expression of vascular endothelin type B and angiotensin type 1 receptors in patients with ischemic heart disease. *BMC Cardiovasc. Disord.* 9: 40.


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Try **ETAR (16): sc-135902**, our highly recommended monoclonal alternative to ETAR (R-19).