SANTA CRUZ BIOTECHNOLOGY, INC.

AE2 (H-156): sc-99048

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Primary canalicular bile undergoes a process of fluidization and alkalinization along the biliary tract that is influenced by several factors, including hormones, innervation/neuropeptides and biliary constituents. The excretion of bicarbonate at both the canaliculi and the bile ducts is an important contributor to the generation of bile-salt independent flow. Bicarbonate is secreted from hepatocytes and cholangiocytes through parallel mechanisms, which involve chloride efflux through activation of chloride channels and further bicarbonate secretion via AE2 (also designated SLC4A2)-mediated chloride/bicarbonate exchange. The AE2 protein regulates pH, chloride concentration, cell volume and transepithelial ion transport in many tissues. Gene silencing of AE2 causes a marked inhibition of unstimulated and secretin-stimulated chloride/bicarbonate exchange, which maintains the bile acid pool that is crucial for secretin to induce bicarbonate-rich choleresis.

REFERENCES

1. Eladari, D., et al. 1998. Functional and molecular characterization of luminal and basolateral Cl^-/HCO^- exchangers of rat thick limbs. Am. J. Physiol. 275: 334-342.
2. Gawenis, L.R., et al. 2004. Mice with a targeted disruption of the AE2 Cl^-/HCO_3^- exchanger are achlorhydric. J. Biol. Chem. 279: 30531-30539.
3. Stewart, A.K., et al. 2004. Acute pH-dependent regulation of AE2-mediated anion exchange involves discrete local surfaces of the NH_2-terminal cytoplasmic domain. J. Biol. Chem. 279: 52664-52676.
4. Aranda, V., et al. 2004. Shared apical sorting of anion exchanger isoforms AE2a, AE2b1, and AE2b2 in primary hepatocytes. Biochem. Biophys. Res. Commun. 319: 1040-1046.
5. Banales, J.M., et al. 2006. Cholangiocyte anion exchange and biliary bicarbonate excretion. World J. Gastroenterol. 12: 3496-3511.
6. Banales, J.M., et al. 2006. Bicarbonate-rich choleresis induced by secretin in normal rat is taurocholate-dependent and involves AE2 anion exchanger. Hepatology 43: 266-275.

CHROMOSOMAL LOCATION

Genetic locus: SLC4A2 (human) mapping to 7q36.1; Slc4a2 (mouse) mapping to 5 A3.

SOURCE

AE2 (H-156) is a rabbit polyclonal antibody raised against amino acids 100-255 mapping within an internal region of AE2 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.

STORAGE

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

APPLICATIONS

AE2 (H-156) is recommended for detection of AE2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

AE2 (H-156) is also recommended for detection of AE2 in additional species, including equine and bovine.

Suitable for use as control antibody for AE2 siRNA (h): sc-60056, AE2 siRNA (m): sc-60057, AE2 shRNA Plasmid (h): sc-60056-SH, AE2 shRNA Plasmid (m): sc-60057-SH, AE2 shRNA (h) Lentiviral Particles: sc-60056-V and AE2 shRNA (m) Lentiviral Particles: sc-60057-V.

Molecular Weight of AE2: 165 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Caki-1 cell lysate: sc-2224 or SW480 cell lysate: sc-2219.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.