

AE2 (D-3): sc-376632

BACKGROUND

Primary canalicular bile undergoes a process of fluidization and alkalization 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.

CHROMOSOMAL LOCATION

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

SOURCE

AE2 (D-3) is a mouse monoclonal antibody raised against amino acids 100-255 mapping within an N-terminal cytoplasmic domain of AE2 of human origin.

PRODUCT

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

AE2 (D-3) is available conjugated to agarose (sc-376632 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376632 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376632 PE), fluorescein (sc-376632 FITC), Alexa Fluor® 488 (sc-376632 AF488), Alexa Fluor® 546 (sc-376632 AF546), Alexa Fluor® 594 (sc-376632 AF594) or Alexa Fluor® 647 (sc-376632 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376632 AF680) or Alexa Fluor® 790 (sc-376632 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

AE2 (D-3) is recommended for detection of AE2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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.

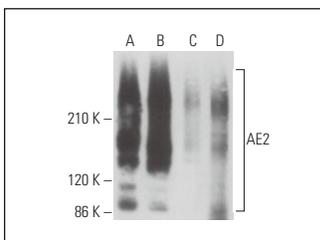
Molecular Weight of AE2: 165 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, NIH/3T3 whole cell lysate: sc-2210 or KNRK whole cell lysate: sc-2214.

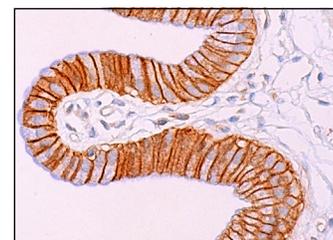
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



AE2 (D-3): sc-376632. Western blot analysis of AE2 expression in K-562 (A), NIH/3T3 (B) and KNRK (C) whole cell lysates and rat lung tissue extract (D).



AE2 (D-3): sc-376632. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing membrane and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Itoh, R., et al. 2021. Both IRBIT and long-IRBIT bind to and coordinately regulate Cl⁻/HCO₃⁻ exchanger AE2 activity through modulating the lysosomal degradation of AE2. *Sci. Rep.* 11: 5990.
2. Wakamatsu, K., et al. 2022. Immunohistochemical expression of osteopontin and collagens in choroid plexus of human brains. *Neuropathology* 42: 117-125.
3. Wakamatsu, K., et al. 2022. Metabolites and biomarker compounds of neurodegenerative diseases in cerebrospinal fluid. *Metabolites* 12: 343.
4. Zhao, J., et al. 2023. The choleric role of tauroursodeoxycholic acid exacerbates α-naphthylisothiocyanate induced cholestatic liver injury through the FXR/BSEP pathway. *J. Appl. Toxicol.* 43: 1095-1103.
5. Li, Y., et al. 2023. Choroid plexus mast cells drive tumor-associated hydrocephalus. *Cell* 186: 5719-5738.e28.

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.

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