SANTA CRUZ BIOTECHNOLOGY, INC.

CFTR (A-3): sc-376683

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

CFTR, for cystic fibrosis transmembrane conductance regulator, is a cyclic adenosine monophosphate (cAMP)-regulated chloride channel protein. CFTR belongs to the MDR subfamily within the ATP-binding transport protein family. It has two transmembrane domains (TMDs), two nucleotide binding domains (NBDs) and one regulatory domain. Mutations of CFTR are associated with cystic fibrosis (CF), a disease characterized by chronic bronchopulmonary disease, elevated sweat electrolytes and insufficient pancreatic function. CFTR mutations can also result in congenital bilateral absence of vas deferens (CBAVD), a form of male sterility that a majority of male CF patients exhibit.

CHROMOSOMAL LOCATION

Genetic locus: CFTR (human) mapping to 7q31.2; Cftr (mouse) mapping to 6 A2.

SOURCE

CFTR (A-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1419-1457 near the C-terminus of CFTR of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CFTR (A-3) is available conjugated to agarose (sc-376683 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376683 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376683 PE), fluorescein (sc-376683 FITC), Alexa Fluor® 488 (sc-376683 AF488), Alexa Fluor® 546 (sc-376683 AF546), Alexa Fluor® 594 (sc-376683 AF594) or Alexa Fluor® 647 (sc-376683 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376683 AF680) or Alexa Fluor® 790 (sc-376683 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376683 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CFTR (A-3) is recommended for detection of CFTR 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 CFTR siRNA (h): sc-35054, CFTR siRNA (m): sc-35053, CFTR shRNA Plasmid (h): sc-35054-SH, CFTR shRNA Plasmid (m): sc-35053-SH, CFTR shRNA (h) Lentiviral Particles: sc-35054-V and CFTR shRNA (m) Lentiviral Particles: sc-35053-V.

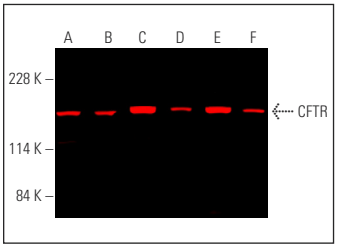
Molecular Weight of CFTR: 165 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, MCF7 whole cell lysate: sc-2206 or AMJ2-C8 whole cell lysate: sc-364366.

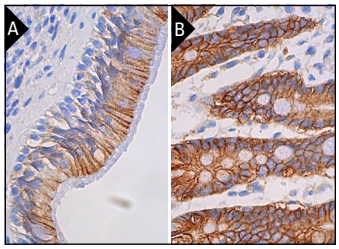
STORAGE

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

DATA



CFTR (A-3): sc-376683. Near-infrared western blot analysis of CFTR expression in AMJ2-C8 (**A**), NIH/3T3 (**B**), PANC-1 (**C**), MCF7 (**D**), Jurkat (**E**) and HeLa (**F**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.



CFTR (A-3): sc-376683. Immunoperoxidase staining of formalin fixed, paraffin-embedded human nasopharynx tissue showing membrane and cytoplasmic staining of respiratory epithelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing membrane and cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Stremmel, W., et al. 2016. Phosphatidylcholine passes through lateral tight junctions for paracellular transport to the apical side of the polarized intestinal tumor cell-line CaCo2. Biochim. Biophys. Acta 1861: 1161-1169.
2. Riquelme, S.A., et al. 2017. Cystic fibrosis transmembrane conductance regulator attaches tumor suppressor PTEN to the membrane and promotes anti *Pseudomonas aeruginosa* immunity. Immunity 47: 1169-1181.e7.
3. Stremmel, W., et al. 2019. Phosphatidylcholine passes by paracellular transport to the apical side of the polarized biliary tumor cell line Mz-ChA-1. Int. J. Mol. Sci. 20: 4034.
4. Liu, H., et al. 2021. The role of CDX2 in renal tubular lesions during diabetic kidney disease. Aging 13: 6782-6803.
5. Stermann, T., et al. 2022. Carbon nanoparticles adversely affect CFTR expression and toxicologically relevant pathways. Sci. Rep. 12: 14255.
6. Xiao, Q., et al. 2022. CFTR reduces the proliferation of lung adenocarcinoma and is a strong predictor of survival in both smokers and non-smokers. J. Cancer Res. Clin. Oncol. 148: 3293-3302.
7. Qiu, Z.E., et al. 2023. *Toxoplasma gondii* infection triggers ongoing inflammation mediated by increased intracellular Cl^- concentration in airway epithelium. J. Infect. 86: 47-59.
8. Leroy, C., et al. 2023. Use of 2,6-diaminopurine as a potent suppressor of UGA premature stop codons in cystic fibrosis. Mol. Ther. 31: 970-985.
9. Rajak, S., et al. 2023. Pharmacological inhibition of CFTR attenuates nonalcoholic steatohepatitis (NASH) progression in mice. Biochim. Biophys. Acta Mol. Basis Dis. 1869: 166662.

RESEARCH USE

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