SANTA CRUZ BIOTECHNOLOGY, INC.

CFTR (M3A7): sc-58615

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.

REFERENCES

1. Riordan, J.R., et al. 1989. Identification of the cystic fibrosis gene: cloning and characterization of complementary DNA. Science 245: 1066-1073.
2. Tsui, L.C. 1992. The spectrum of cystic fibrosis mutations. Trends Genet. 8: 392-398.
3. Gabriel, S.E., et al. 1993. CFTR and outward rectifying chloride channels are distinct proteins with a regulatory relationship. Nature 363: 263-268.
4. Hoof, T., et al. 1994. Cystic fibrosis-type mutational analysis in the ATP-binding cassette transporter signature of human P-glycoprotein Mdr-1. J. Biol. Chem. 269: 20575-20583.
5. Kunzelmann, K. 1999. The cystic fibrosis transmembrane conductance regulator and its function in epithelial transport. Rev. Physiol. Biochem. Pharmacol. 137: 1-70.
6. Lebo, R.V., et al. 2007. Testing and reporting ACMG cystic fibrosis mutation panel results. Genet. Test. 11: 11-31.
7. Lebo, R.V., et al. 2007. Variable penetrance and expressivity of the splice altering 5T sequence in the cystic fibrosis gene. Genet. Test. 11: 32-44.

CHROMOSOMAL LOCATION

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

SOURCE

CFTR (M3A7) is a mouse monoclonal antibody raised against recombinant CFTR NBF 2 domain with an epitope mapping to amino acids 1370-1380 of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 250 µl of PBS, 0.2% stabilizer protein and 15 mM sodium azide.

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

CFTR (M3A7) is recommended for detection of CFTR of mouse, rat and human origin by immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:10-1:200).

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.

SELECT PRODUCT CITATIONS

1. Homma, K., et al. 2010. Interaction between CFTR and prestin (SLC26A5). Biochim. Biophys. Acta 1798: 1029-1040.
2. Brown, M.B., et al. 2011. Low abundance of sweat duct Cl^- channel CFTR in both healthy and cystic fibrosis athletes with exceptionally salty sweat during exercise. Am. J. Physiol. Regul. Integr. Comp. Physiol. 300: R605-R615.
3. Alcolado, N., et al. 2011. VIP-dependent increase in F508del-CFTR membrane localization is mediated by PKCε. Am. J. Physiol., Cell Physiol. 301: C53-C65.
4. Zhang, J.T., et al. 2013. Downregulation of CFTR promotes epithelial-to-mesenchymal transition and is associated with poor prognosis of breast cancer. Biochim. Biophys. Acta 1833: 2961-2969.
5. Weis, V.G., et al. 2013. Heterogeneity in mouse spasmolytic polypeptide-expressing metaplasia lineages identifies markers of metaplastic progression. Gut 62: 1270-1279.

PROTOCOLS

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

CONJUGATES

See **CFTR (A-3): sc-376683** for CFTR antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.