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CFTR Antibody

Catalog # ASC11771

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P13569
Other Accession	NP_000483, 90421313
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	168142
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	CFTR antibody can be used for detection of CFTR by Western blot at 1 - 2 g/ml. Antibody can also be used for Immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	1080
Other Names	Cystic fibrosis transmembrane conductance regulator, CFTR, ATP-binding cassette sub-family C member 7, Channel conductance-controlling ATPase, 3.6.3.49, cAMP-dependent chloride channel, CFTR, ABCC7
Target/Specificity	CFTR; CFTR antibody is human, mouse and rat reactive.
Reconstitution & Storage	CFTR antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	CFTR Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CFTR (HGNC:1884)
Synonyms	ABCC7
Function	Epithelial ion channel that plays an important role in the regulation of epithelial ion and water transport and fluid homeostasis (PubMed:26823428). Mediates the transport of chloride ions across the cell membrane (PubMed:10792060, PubMed:11524016, PubMed:11707463, PubMed:12519745, PubMed:12529365, PubMed:12588899, PubMed:12727866, PubMed:15010471, PubMed:17036051, PubMed:1712898, PubMed:17182731, PubMed:19398555, PubMed:19621064, PubMed:22178883, PubMed:25330774, PubMed:26846474,

PubMed:28087700, PubMed:8910473, PubMed:9804160). Possesses an intrinsic ATPase activity and utilizes ATP to gate its channel; the passive flow of anions through the channel is gated by cycles of ATP binding and hydrolysis by the ATP-binding domains (PubMed:11524016, PubMed:15284228, PubMed:26627831, PubMed:8910473). The ion channel is also permeable to HCO(3)(-); selectivity depends on the extracellular chloride concentration (PubMed:15010471, PubMed:19019741). In vitro, mediates ATP-dependent glutathione flux (PubMed:12727866). Exerts its function also by modulating the activity of other ion channels and transporters (PubMed:12403779, PubMed:22121115, PubMed:22178883, PubMed:27941075). Plays an important role in airway fluid homeostasis (PubMed:16645176, PubMed:19621064, PubMed:26823428). Contributes to the regulation of the pH and the ion content of the airway surface fluid layer and thereby plays an important role in defense against pathogens (PubMed:14668433, PubMed:16645176, PubMed:26823428). Modulates the activity of the epithelial sodium channel (ENaC) complex, in part by regulating the cell surface expression of the ENaC complex (PubMed:17182731, PubMed:17434346, PubMed:27941075). Inhibits the activity of the ENaC channel containing subunits SCNN1A, SCNN1B and SCNN1G (PubMed:17182731). Inhibits the activity of the ENaC channel containing subunits SCNN1D, SCNN1B and SCNN1G, but not of the ENaC channel containing subunits SCNN1A, SCNN1B and SCNN1G (PubMed:17182731, PubMed:27941075). May regulate bicarbonate secretion and salvage in epithelial cells by regulating the transporter SLC4A7 (PubMed:12403779). Can inhibit the chloride channel activity of ANO1 (PubMed:22178883). Plays a role in the chloride and bicarbonate homeostasis during sperm epididymal maturation and capacitation (PubMed:19923167, PubMed:27714810, PubMed:29393851).

Cellular Location

Apical cell membrane; Multi-pass membrane protein {ECO:0000269|Ref.57}. Early endosome membrane; Multi-pass membrane protein {ECO:0000269|Ref.57}. Cell membrane; Multi-pass membrane protein {ECO:0000269|Ref.57}. Recycling endosome membrane; Multi-pass membrane protein {ECO:0000269|Ref.57}. Endoplasmic reticulum membrane; Multi-pass membrane protein {ECO:0000269|Ref.57}. Nucleus {ECO:0000250|UniProtKB:P34158}. Note=The channel is internalized from the cell surface into an endosomal recycling compartment, from where it is recycled to the cell membrane (PubMed:17462998, PubMed:19398555, PubMed:20008117). In the oviduct and bronchus, detected on the apical side of epithelial cells, but not associated with cilia (PubMed:22207244). In Sertoli cells, a processed product is detected in the nucleus (By similarity). ER stress induces GORASP2-mediated unconventional (ER/Golgi-independent) trafficking of core-glycosylated CFTR to cell membrane (PubMed:21884936). {ECO:0000250|UniProtKB:P34158, ECO:0000269|PubMed:19398555, ECO:0000269|PubMed:20008117, ECO:0000269|PubMed:21884936, ECO:0000269|PubMed:22207244, ECO:0000305|PubMed:17462998}

Tissue Location

Expressed in the respiratory airway, including bronchial epithelium, and in the female reproductive tract, including oviduct (at protein level) (PubMed:15716351, PubMed:22207244). Detected in pancreatic intercalated ducts in the exocrine tissue, on epithelial cells in intralobular striated ducts in sublingual salivary glands, on apical membranes of crypt cells throughout the small and large intestine, and on the reabsorptive duct in eccrine sweat glands (PubMed:1284548, PubMed:28130590). Detected on the equatorial segment of the sperm head (at protein level) (PubMed:19923167). Detected in nasal and bronchial superficial epithelium (PubMed:15716351). Expressed by the central cells on the sebaceous glands, dermal adipocytes and, at lower levels, by epithelial cells (PubMed:28130590)

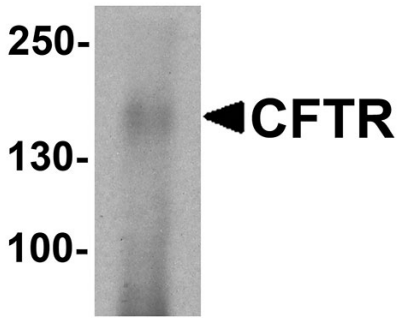
Background

The cystic fibrosis transmembrane conductance regulator (CFTR) protein is a member of the ATP-binding cassette (ABC) transporter superfamily, and a member of the MRP subfamily that is involved in multi-drug resistance (1,2). CFTR functions as a chloride channel and controls the regulation of other transport pathways (3). Mutations in this gene are associated with the autosomal recessive disorder cystic fibrosis, the most common, fatal, inherited disease of caucasian populations (1).

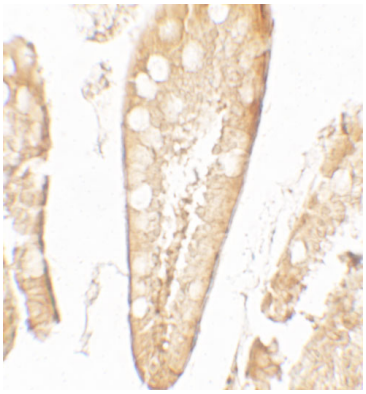
References

Kerem B, Rommens JM, Buchanan JA, et al. Identification of the cystic fibrosis gene: genetic analysis. Science 1989; 245:1073-80.
Harris A and Argent BE. The cystic fibrosis gene and its product CFTR. Semin. Cell Biol. 1993; 4:37-44.
Schwiebert EM, Benos DJ, Egan ME, et al. CFTR is a conductance regulator as well as a chloride channel. Physiol. Rev. 1999; 79:S145-66.

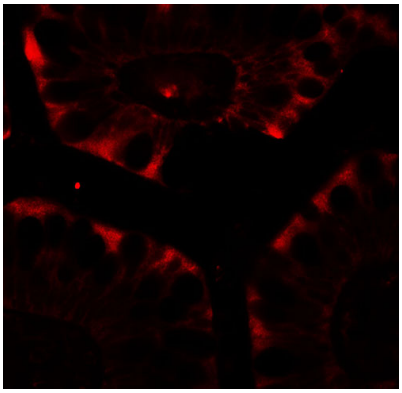
Images



Western blot analysis of CFTR in human small intestine tissue lysate with CFTR antibody at 1 µg/ml.



Immunohistochemistry of CFTR in human small intestine tissue with CFTR antibody at 5 µg/mL.



Immunofluorescence of CFTR in human small intestine tissue with CFTR antibody at 20 µg/mL.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.