abcam

Product datasheet

Anti-CFTR antibody [CF3] ab2784

8 Abreviews 26 References 9 Images

Overview

Product name	Anti-CFTR antibody [CF3]
Description	Mouse monoclonal [CF3] to CFTR
Host species	Mouse
Tested applications	**Suitable for:** ICC/IF, IP, IHC-P, WB, Inhibition Assay, Flow Cyt
Species reactivity	**Reacts with:** Mouse, Rat, Chicken, Guinea pig, Human, Pig **Predicted to work with:** Sheep, Rabbit, Horse, Cow, Dog, Chimpanzee, Non human primates, Rhesus monkey, Gorilla, African bush elephant
Immunogen	Synthetic peptide corresponding to Human CFTR aa 103-117. Found in the first extracellular loop of human and rabbit CFTR. Sequence: GRIIASYDPDNKEER (Peptide available as ab4911) Run BLAST with Run BLAST with

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.05% Sodium azide Diluted ascites
Purity	Ascites
Primary antibody notes	Cystic Fibrosis (CF) is a common lethal genetic disease caused by mutations of the gene coding for the cystic fibrosis transmembrane conductance factor, a cAMP regulated chloride channel. Approximately 70% of all CF cases share the deletion of a phenylalanine at position 508 (delta F508) which results in abnormal chloride transport. Since the CF mutation is lethal, most often by lung and liver disease, it raises the question of why this genetic disease remains as common as it is. One possible explanation is that Salmonella typhi has been shown to use CFTR to enter intestinal epithelial cells and that delta F508 heterozygote and homozygote mice showed 86% and 100% reductions in S.typhi intestinal submucosal uptake.

Clonality	Monoclonal
Clone number	CF3
Isotype	IgM

Applications

Our Abpromise guarantee covers the use of **ab2784** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

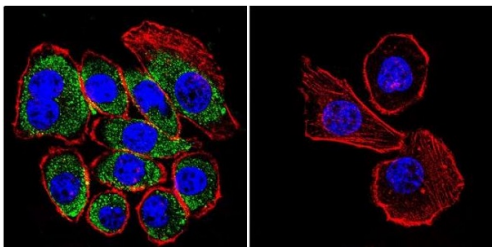
Application	Abreviews	Notes
ICC/IF	★★★★☆	Use at an assay dependent concentration.
IP		Use at an assay dependent concentration.
IHC-P	★★★★☆	1/200.
WB	★★★★☆	1/500. Predicted molecular weight: 168 kDa.
Inhibition Assay		Use at an assay dependent concentration.
Flow Cyt	★★☆☆☆	Use 1µg for 10^6 cells. ab91545 - Mouse monoclonal IgM, is suitable for use as an isotype control with this antibody.

Target

Function	Involved in the transport of chloride ions. May regulate bicarbonate secretion and salvage in epithelial cells by regulating the SLC4A7 transporter.
Tissue specificity	Found on the surface of the epithelial cells that line the lungs and other organs.
Involvement in disease	Defects in CFTR are the cause of cystic fibrosis (CF) [MIM:219700]; also known as mucoviscidosis. CF is the most common genetic disease in the Caucasian population, with a prevalence of about 1 in 2'000 live births. Inheritance is autosomal recessive. CF is a common generalized disorder of exocrine gland function which impairs clearance of secretions in a variety of organs. It is characterized by the triad of chronic bronchopulmonary disease (with recurrent respiratory infections), pancreatic insufficiency (which leads to malabsorption and growth retardation) and elevated sweat electrolytes. Defects in CFTR are the cause of congenital bilateral absence of the vas deferens (CBAVD) [MIM:277180]. CBAVD is an important cause of sterility in men and could represent an incomplete form of cystic fibrosis, as the majority of men suffering from cystic fibrosis lack the vas deferens.
Sequence similarities	Belongs to the ABC transporter superfamily. ABCC family. CFTR transporter (TC 3.A.1.202) subfamily. Contains 2 ABC transmembrane type-1 domains. Contains 2 ABC transporter domains.
Domain	The PDZ-binding motif mediates interactions with GOPC and with the SLC4A7, SLC9A3R1/EBP50 complex.
Post-translational	Phosphorylated; activates the channel. It is not clear whether PKC phosphorylation itself

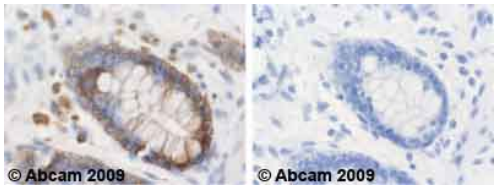
modifications	activates the channel or permits activation by phosphorylation at PKA sites. Ubiquitinated, leading to its degradation in the lysosome. Deubiquitination by USP10 in early endosomes, enhances its endocytic recycling.
Cellular localization	Early endosome membrane.

Images



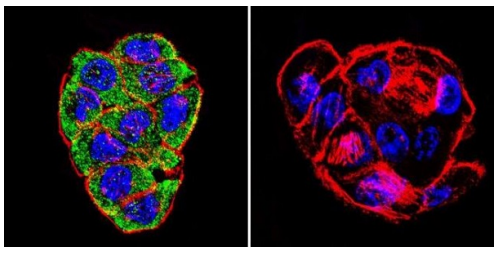
Immunocytochemistry/ Immunofluorescence - Anti-CFTR antibody [CF3] (ab2784)

Immunofluorescent analysis of CFTR using CFTR Monoclonal antibody (CF3) ab2784 shows staining in U251 glioma cells. CFTR staining (green) F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue) is shown. Cells were grown on chamber slides and fixed with formaldehyde prior to staining. Cells were probed without (control) or with or an antibody recognizing CFTR ab2784 at a dilution of 1:100-1:200 over night at 4 °C washed with PBS and incubated with a DyLight®-488 conjugated secondary antibody. Images were taken at 60X magnification.



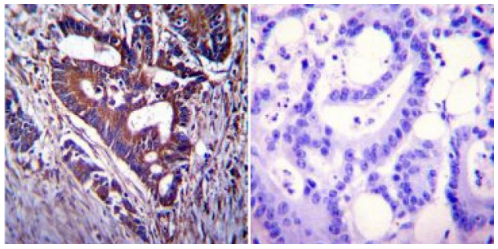
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CFTR antibody [CF3] (ab2784)

Ab2784 staining Human normal colon. Staining is localized to the cell membrane. Left panel: with primary antibody at 2 ug/ml. Right panel: isotype control.
Sections were stained using an automated system DAKO Autostainer Plus , at room temperature. Sections were rehydrated and antigen retrieved with the Dako 3-in-1 AR buffer citrate pH 6.0 in a DAKO PT Link. Slides were peroxidase blocked in 3% H2O2 in methanol for 10 minutes. They were then blocked with Dako Protein block for 10 minutes (containing casein 0.25% in PBS), then incubated with primary antibody for 20 minutes, and detected with Dako Envision Flex amplification kit for 30 minutes. Colorimetric detection was completed with diaminobenzidine for 5 minutes. Slides were counterstained with Haematoxylin and coverslipped under DePeX. Please note that for manual staining we recommend to optimize the primary antibody concentration and incubation time (overnight incubation), and amplification may be required.



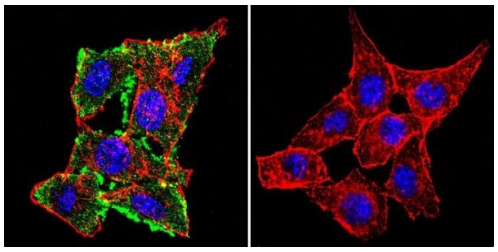
Immunocytochemistry/ Immunofluorescence - Anti-CFTR antibody [CF3] (ab2784)

Immunofluorescent analysis of CFTR using CFTR Monoclonal antibody (CF3) ab2784 shows staining in WiDr colon carcinoma cells. CFTR staining (green) F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue) is shown. Cells were grown on chamber slides and fixed with formaldehyde prior to staining. Cells were probed without (control) or with or an antibody recognizing CFTR ab2784 at a dilution of 1:100-1:200 over night at 4 °C washed with PBS and incubated with a DyLight®-488 conjugated secondary antibody. Images were taken at 60X magnification.



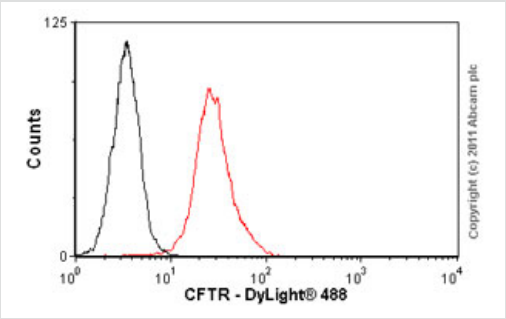
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CFTR antibody [CF3] (ab2784)

Immunohistochemistry was performed on cancer biopsies of deparaffinized Human colon carcinoma tissue. To expose target proteins heat induced antigen retrieval was performed using 10mM sodium citrate (pH6.0) buffer microwaved for 8-15 minutes. Following antigen retrieval tissues were blocked in 3% BSA-PBS for 30 minutes at room temperature. Tissues were then probed at a dilution of 1:200 with a mouse monoclonal antibody recognizing CFTR ab2784 or without primary antibody (negative control) overnight at 4°C in a humidified chamber. Tissues were washed extensively with PBST and endogenous peroxidase activity was quenched with a peroxidase suppressor. Detection was performed using a biotin-conjugated secondary antibody and SA-HRP followed by colorimetric detection using DAB. Tissues were counterstained with hematoxylin and prepped for mounting.



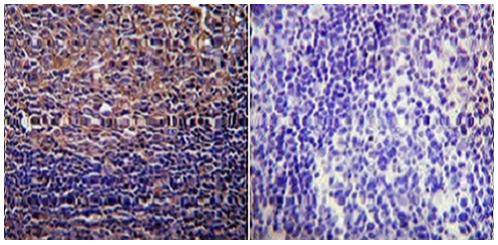
Immunocytochemistry/ Immunofluorescence - Anti-CFTR antibody [CF3] (ab2784)

Immunocytochemistry/Immunofluorescent analysis of HeLa cells labelling CFTR with ab2784. CFTR staining (green) F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue) is shown. Cells were grown on chamber slides and fixed with formaldehyde prior to staining. Cells were probed without (control) or with or an antibody recognizing CFTR ab2784 at a dilution of 1:100-1:200 over night at 4 °C washed with PBS and incubated with a DyLight®-488 conjugated secondary antibody. Images were taken at 60X magnification.



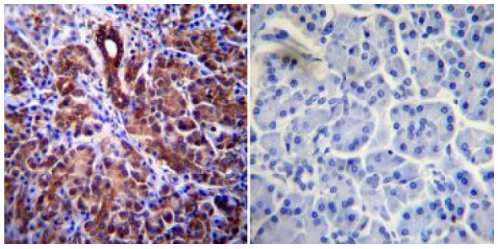
Flow Cytometry - Anti-CFTR antibody [CF3] (ab2784)

Overlay histogram showing A549 cells stained with ab2784 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab2784, 1/100 dilution) for 30 min at 22ºC. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22ºC. Isotype control antibody (black line) was mouse IgM [ICIGM] (ab91545, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in A549 cells fixed with 80% methanol (5 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.



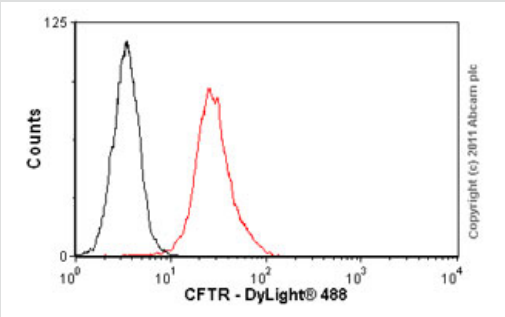
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CFTR antibody [CF3] (ab2784)

Immunohistochemistry was performed on normal biopsies of deparaffinized Human tonsil tissue. To expose target proteins heat induced antigen retrieval was performed using 10mM sodium citrate (pH6.0) buffer microwaved for 8-15 minutes. Following antigen retrieval tissues were blocked in 3% BSA-PBS for 30 minutes at room temperature. Tissues were then probed at a dilution of 1:200 with a mouse monoclonal antibody recognizing CFTR ab2784 or without primary antibody (negative control) overnight at 4°C in a humidified chamber. Tissues were washed extensively with PBST and endogenous peroxidase activity was quenched with a peroxidase suppressor. Detection was performed using a biotin-conjugated secondary antibody and SA-HRP followed by colorimetric detection using DAB. Tissues were counterstained with hematoxylin and prepped for mounting.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CFTR antibody [CF3] (ab2784)

Immunohistochemistry was performed on normal biopsies of deparaffinized Human pancreas tissue. To expose target proteins heat induced antigen retrieval was performed using 10mM sodium citrate (pH6.0) buffer microwaved for 8-15 minutes. Following antigen retrieval tissues were blocked in 3% BSA-PBS for 30 minutes at room temperature. Tissues were then probed at a dilution of 1:200 with a mouse monoclonal antibody recognizing CFTR ab2784 or without primary antibody (negative control) overnight at 4°C in a humidified chamber. Tissues were washed extensively with PBST and endogenous peroxidase activity was quenched with a peroxidase suppressor. Detection was performed using a biotin-conjugated secondary antibody and SA-HRP followed by colorimetric detection using DAB. Tissues were counterstained with hematoxylin and prepped for mounting.



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