SANTA CRUZ BIOTECHNOLOGY, INC.

FTα (C-4): sc-373749

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Mammalian protein farnesyl transferases are heterodimeric proteins containing two nonidentical α and β subunits that attach farnesyl residues to a cysteine at the fourth position from the COOH terminus of several proteins, including nuclear lamins and p21Ras proteins. The natural substrates contain the Cys-A-A-Xaa recognition sequence, where the A residues are aliphatic and Xaa represents methionine, serine, glutamine or cysteine. The purified farnesyl transferase is an αβ heterodimer. The β subunit binds the peptide substrate while the α subunit is suspected to participate in formation of a stable complex with the substrate farnesyl pyrophosphate. The α subunit is shared with a second prenyltransferase, geranylgeranyl transferase, that attaches 20 carbon geranylgeranyl to Ras-related proteins that terminate in a Cys-A-A-Xaa recognition site in which Xaa is leucine.

REFERENCES

1. Clarke, S., et al. 1988. Posttranslational modification of the Ha-Ras oncogene protein: evidence for a third class of protein carboxyl methyltransferases. Proc. Natl. Acad. Sci. USA 85: 4643-4647.
2. Reiss, Y., et al. 1990. Inhibition of purified $p21^{ras}$ farnesyl: protein transferase by Cys-AAX tetrapeptides. Cell 62: 81-88.
3. Reiss, Y., et al. 1991. Sequence requirement for peptide recognition by rat brain $p21^{ras}$ protein farnesyltransferase. Proc. Natl. Acad. Sci. USA 88: 732-736.
4. Chen, W.J., et al. 1991. Cloning and expression of a cDNA encoding the α subunit of rat $p21^{ras}$ protein farnesyltransferase. Proc. Natl. Acad. Sci. USA 88: 11368-11372.
5. Reiss, Y., et al. 1991. Nonidentical subunits of $p21^{H\text{-}ras}$ farnesyltransferase. J. Biol. Chem. 266: 10672-10677.
6. Moores, S.L., et al. 1991. Sequence dependence of protein isoprenylation. J. Biol. Chem. 266: 14603-14610.
7. Seabra, M.C., et al. 1991. Protein farnesyltransferase and geranylgeranyltransferase share a common α subunit. Cell 65: 429-434.
8. Andres, D.A., et al. 1993. cDNA cloning of the two subunits of human CAAX farnesyltransferase and chromosomal mapping of FNTA and FNTB loci and related sequences. Genomics 18: 105-112.
9. Long, S.B., et al. 2002. Reaction path of protein farnesyltransferase at atomic resolution. Nature 419: 645-650.

CHROMOSOMAL LOCATION

Genetic locus: FNTA (human) mapping to 8p11.21.

SOURCE

FTα (C-4) is a mouse monoclonal antibody raised against amino acids 1-379 representing full length FTα of human origin.

PRODUCT

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

APPLICATIONS

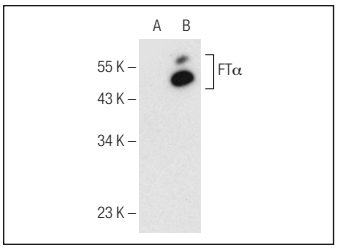
FTα (C-4) is recommended for detection of FTα of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (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 FTα siRNA (h): sc-35420, FTα shRNA Plasmid (h): sc-35420-SH and FTα shRNA (h) Lentiviral Particles: sc-35420-V.

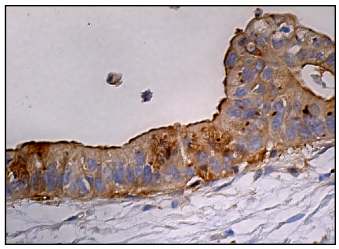
Molecular Weight of FTα: 49 kDa.

Positive Controls: FTα (h): 293 Lysate: sc-112923, HL-60 whole cell lysate: sc-2209 or Jurkat whole cell lysate: sc-2204.

DATA



FTα (C-4): sc-373749. Western blot analysis of FTα expression in non-transfected: sc-110760 (**A**) and human FTα transfected: sc-112923 (**B**) 293 whole cell lysates.



FTα (C-4): sc-373749. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Assi, M., et al. 2020. A novel KRAS antibody highlights a regulation mechanism of post-translational modifications of KRAS during tumorigenesis. Int. J. Mol. Sci. 21: 6361.

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.

PROTOCOLS

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