SANTA CRUZ BIOTECHNOLOGY, INC.

p-Cytokeratin 18 (Ser 52): sc-17032

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

Cytokeratins comprise a diverse group of intermediate filament proteins (IFPs) that are expressed as pairs in both keratinized and non-keratinized epithelial tissue. Cytokeratins play a critical role in differentiation and tissue specialization and function to maintain the overall structural integrity of epithelial cells. Cytokeratins have been found to be useful markers of tissue differentiation which is directly applicable to the characterization of malignant tumors. For example, cytokeratins 10 and 13 are expressed highly in a subset of squamous cell carcinomas while cytokeratin 18 is expressed in a majority of adenocarcinomas and basal cell carcinomas. Cytokeratin 18 contains two major phosphorylation sites on Ser 33 and Ser 52. Phosphorylation of Ser 18 is essential for the association of cytokeratin 18 with 14-3-3 proteins and is involved in keratin organization and distribution.

REFERENCES

1. van der Velden, L.A., et al. 1993. Cytokeratin expression in normal and (pre)malignant head and neck epithelia: an overview. Head Neck 15: 133-146.
2. Silen, A., et al. 1994. Evaluation of a new tumor marker for cytokeratin 8 and 18 fragments in healthy individuals and prostate cancer patients. Prostate 24: 326-332.
3. Marceau, N. and Loranger, A. 1995. Cytokeratin expression, fibrillar organization and subtle function in liver cells. Biochem. Cell Biol. 73: 619-625.
4. Quillien, V., et al. 1995. Serum and tissue distribution of a fragment of cytokeratin 19 (cyfra 21-1) in lung cancer patients. Anticancer Res. 15: 2857-2863.
5. Silen, A., et al. 1995. A novel IRMA and ELISA for quantifying cytokeratin 8 and 18 fragments in the sera of healthy individuals and cancer patients. Scan. J. Clin. Lab. Invest. 55: 153-161.

CHROMOSOMAL LOCATION

Genetic locus: KRT18 (human) mapping to 12q13.13.

SOURCE

p-Cytokeratin 18 (Ser 52) is available as either goat (sc-17032) or rabbit (sc-17032-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 52 phosphorylated Cytokeratin 18 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-17032 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

p-Cytokeratin 18 (Ser 52) is recommended for detection of Ser 52 phosphorylated Cytokeratin 18 of human origin by Western Blotting (starting dilution 1:200, 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).

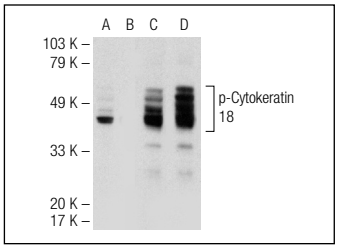
p-Cytokeratin 18 (Ser 52) is also recommended for detection of correspondingly phosphorylated Cytokeratin 18 in additional species, including canine.

Suitable for use as control antibody for Cytokeratin 18 siRNA (h): sc-35151, Cytokeratin 18 shRNA Plasmid (h): sc-35151-SH and Cytokeratin 18 shRNA (h) Lentiviral Particles: sc-35151-V.

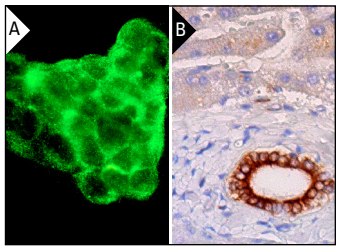
Molecular Weight of p-Cytokeratin 18: 45 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or A-431 whole cell lysate: sc-2201.

DATA



Western blot analysis of Cytokeratin 18 phosphorylation in untreated (**A**,**C**) and lambda protein phosphatase (sc-200312A) treated (**B**,**D**) A-431 whole cell lysates. Antibodies tested include p-Cytokeratin 18 (Ser 52)-R: sc-17032-R (**A**,**B**) and Cytokeratin 18 (RCK106): sc-32722 (**C**,**D**).



p-Cytokeratin 18 (Ser 52): sc-17032. Immunofluorescence staining of methanol-fixed MCF7 cells showing cytoskeletal localization. Immunoperox-idase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of bile duct cells.

SELECT PRODUCT CITATIONS

1. Dinsdale, D., et al. 2004. Intermediate filaments control the intracellular distribution of caspases during apoptosis. Am. J. Pathol. 164: 395-407.
2. Long, R.M., et al. 2007. Alterations in the expression of inhibitors of apoptosis during differentiation of prostate epithelial cells. BJU Int. 100: 445-449.
3. Shi, Y., et al. 2010. Keratin 18 phosphorylation as a progression marker of chronic hepatitis B. Virol. J. 7: 70.

RESEARCH USE

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

PROTOCOLS

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