



Cytokeratin 6 (5F222): sc-70930

BACKGROUND

Cytokeratins comprise a diverse group of intermediate filament proteins (IFPs) that are expressed as pairs in both keratinized and non-keratinized epithelial tissue, where they constitute up to 85% of mature keratinocytes in the vertebrate epidermis. Cytokeratins play a critical role in differentiation and tissue specialization and function to maintain the overall structural integrity of epithelial cells. The α -helical coiled-coil dimers associate laterally end-to-end to form 10 nm diameter filaments. Cytokeratins, which are useful markers of tissue differentiation, also aid in the characterization of malignant tumors. Interleukin-1 and TNF α induce transcription of Cytokeratin 6 in epidermal keratinocytes via the C/EBP β transcription factor. In humans, multiple isoforms of Cytokeratin 6 (6A-6F), encoded by several highly homologous genes, have distinct tissue expression patterns, and Cytokeratin 6A is the dominant form in epithelial tissue. The gene encoding human Cytokeratin 6A maps to chromosome 12q13, and mutations in this gene are linked to several inheritable hair and skin pathologies.

REFERENCES

1. van der Velden, L.A., Schaafsma, H.E., Manni, J.J., Ramaekers, F.C. and Kuijpers, W. 1993. Cytokeratin expression in normal and (pre)malignant head and neck epithelia: an overview. *Head Neck* 15: 133-146.
2. Takahashi, K., Paladini, R.D. and Coulombe, P.A. 1995. Cloning and characterization of multiple human genes and cDNAs encoding highly related type II keratin 6 isoforms. *J. Biol. Chem.* 270: 18581-18592.
3. Marceau, N. and Loranger, A. 1995. Cytokeratin expression, fibrillar organization and subtle function in liver cells. *Biochem. Cell Biol.* 73: 619-625.
4. Fuchs, E. 1995. Keratins and the skin. *Annu. Rev. Cell. Dev. Biol.* 11: 123-153.
5. Quillien, V., Ramee, M.P., Bansard, J.Y., Meritte, H., Briens, E., Logeais, Y., Langanay, T., Corbineau, H. and Dazord, L. 1995. Serum and tissue distribution of a fragment of Cytokeratin 19 (CYFRA 21-1) in lung cancer patients. *Anticancer Res.* 15: 2857-2863.
6. Mukhopadhyay, T. and Roth, J.A. 1996. Functional inactivation of p53 by antisense RNA induces invasive ability of lung carcinoma cells and down-regulates Cytokeratin synthesis. *Anticancer Res.* 16: 1683-1689.
7. Lin, M.T., Levy, M.L., Bowden, P.E., Magro, C., Baden, L., Baden, H.P. and Roop, D.R. 1999. Identification of sporadic mutations in the helix initiation motif of keratin 6 in two pachyonychia congenita patients: further evidence for a mutational hot spot. *Exp. Dermatol.* 8: 115-119
8. Komine, M., Rao, L.S., Kaneko, T., Tomic-Canic, M., Tamaki, K., Freedberg I.M. and Blumenberg, M. 2000. Transcriptional complex containing NF κ B and C/EBP β . *J. Biol. Chem.* 275: 32077-32088
9. Horev, L., Glaser, B., Metzker, A., Ben-Amitai, D., Vardy, D. and Zlotogorski, A. 2000. Monilethrix: mutational hotspot in the helix termination motif of the human hair basic keratin 6. *Hum. Hered.* 50: 325-330.

RESEARCH USE

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

CHROMOSOMAL LOCATION

Genetic locus: KRT6 (human) mapping to 12q12-q13.

SOURCE

Cytokeratin 6 (5F222) is a mouse monoclonal antibody raised against a cytoskeletal preparation of callus material of human origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 500 μ l PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Cytokeratin 6 (5F222) is recommended for detection of Cytokeratin 6 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Cytokeratin 6: 56 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

STORAGE

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

PROTOCOLS

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