SANTA CRUZ BIOTECHNOLOGY, INC.

Cytokeratin 14 (LL002): sc-58724



Cytokeratins comprise a diverse group of intermediate filament proteins (IFPs) that are expressed in 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 are useful markers of tissue differentiation and, in addition, they aid in the characterization of malignant tumors. In Bowen's disease, the characteristic malignancy of the epidermis exhibits distinct expression patterns of Cytokeratin 14. The gene encoding human Cytokeratin 14 maps to chromosome 17q21.2. Mutations in this gene lead to epidermolysis bullosa simplex, an inheritied skin disorder characterized by skin blistering due to basal keratinocyte fragility.

REFERENCES

BACKGROUND

- Rosenberg, M., et al. 1988. A group of type I keratin genes on human chromosome 17: characterization and expression. Mol. Cell. Biol. 8: 722-736.
- 2. Bonifas, J.M., et al. 1991. Epidermolysis bullosa simplex: evidence in two families for keratin gene abnormalities. Science 254: 1202-1205.
- 3. 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.
- Chan, Y., et al. 1994. A human keratin 14 "knockout": the absence of K14 leads to severe epidermolysis bullosa simplex and a function for an intermediate filament protein. Genes Dev. 8: 2574-2587.
- Marceau, N. and Loranger, A. 1995. Cytokeratin expression, fibrillar organization and subtle function in liver cells. Biochem. Cell Biol. 73: 619-625.
- 6. Fuchs, E. 1995. Keratins and the skin. Annu. Rev. Cell Dev. Biol. 11: 123-153.
- 7. 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.
- 8. Chen, H., et al. 1995. Keratin 14 gene mutations in patients with epidermolysis bullosa simplex. J. Invest. Dermatol. 105: 629-632.
- Mukhopadhyay, T. and Roth, J.A. 1996. Functional inactivation of p53 by antisense RNA induces invasive ability of lung carcinoma cells and downregulates Cytokeratin synthesis. Anticancer Res. 16: 1683-1689.

CHROMOSOMAL LOCATION

Genetic locus: KRT14 (human) mapping to 17q21.2; Krt14 (mouse) mapping to 11 D.

SOURCE

Cytokeratin 14 (LL002) is a mouse monoclonal antibody raised against synthetic C-terminal Cytokeratin 14 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 100 $\mu g~lg G_3$ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Cytokeratin 14 (LL002) is recommended for detection of Cytokeratin 14 of mouse, rat and human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Cytokeratin 14 siRNA (h): sc-43309, Cytokeratin 14 siRNA (m): sc-43310, Cytokeratin 14 shRNA Plasmid (h): sc-43309-SH, Cytokeratin 14 shRNA Plasmid (m): sc-43310-SH, Cytokeratin 14 shRNA (h) Lentiviral Particles: sc-43309-V and Cytokeratin 14 shRNA (m) Lentiviral Particles: sc-43310-V.

Molecular Weight of Cytokeratin 14: 50 kDa.

SELECT PRODUCT CITATIONS

- Sterz, C.M., et al. 2010. A basal-cell-like compartment in head and neck squamous cell carcinomas represents the invasive front of the tumor and is expressing MMP-9. Oral Oncol. 46: 116-122.
- Yamashiro, Y., et al. 2010. Ectopic coexpression of keratin 8 and 18 promotes invasion of transformed keratinocytes and is induced in patients with cutaneous squamous cell carcinoma. Biochem. Biophys. Res. Commun. 399: 365-372.
- Sardella, A., et al. 2012. Morphological evaluation of tongue mucosa in burning mouth syndrome. Arch. Oral Biol. 57: 94-101.
- Fujita, Y., et al. 2012. Conversion from human haematopoietic stem cells to keratinocytes requires keratinocyte secretory factors. Clin. Exp. Dermatol. 37: 658-664.
- 5. Kidwai, F.K., et al. 2014. Differentiation of epidermal keratinocytes from human embryonic stem cells. Methods Mol. Biol. 1195: 13-22.

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 for detailed protocols and support products.



See **Cytokeratin 14 (LL001): sc-53253** for Cytokeratin 14 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.