

Cytokeratin 14 (C-14): sc-17104

BACKGROUND

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 inherited skin disorder characterized by skin blistering due to basal keratinocyte fragility.

REFERENCES

1. 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 premalignant head and neck epithelia: an overview. *Head Neck* 15: 133-146.
4. 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.
5. 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.

CHROMOSOMAL LOCATION

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

SOURCE

Cytokeratin 14 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Cytokeratin 14 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-17104 P, (100 μ g 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

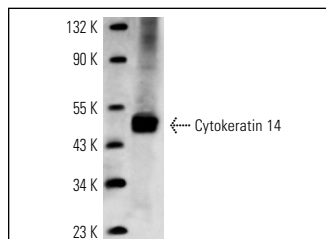
Cytokeratin 14 (C-14) is recommended for detection of Cytokeratin 14 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, 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).

Cytokeratin 14 (C-14) is also recommended for detection of Cytokeratin 14 in additional species, including equine, canine and porcine.

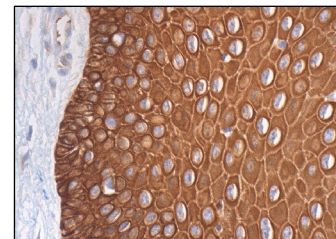
Suitable for use as control antibody for Cytokeratin 14 siRNA (h): sc-43309, Cytokeratin 14 siRNA (m): sc-43310, Cytokeratin 14 shRNA Plasmid (h): sc-43309-SH, Cytokeratin 14 shRNA Plasmid (m): sc-43310-SH, Cytokeratin 14 shRNA (h) Lentiviral Particles: sc-43309-V and Cytokeratin 14 shRNA (m) Lentiviral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

Molecular Weight of Cytokeratin 14: 50 kDa.

DATA



Cytokeratin 14 (C-14): sc-17104. Western blot analysis of Cytokeratin 14 expression in 804G whole cell lysate.



Cytokeratin 14 (C-14): sc-17104. Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic staining of squamous epithelial cells.

SELECT PRODUCT CITATIONS

1. Avivar, A., et al. 2006. Moderate overexpression of AIB1 triggers pre-neoplastic changes in mammary epithelium. *FEBS Lett.* 580: 5222-5226.
2. Chen, B.Y., et al. 2007. Hedgehog is involved in prostate basal cell hyperplasia formation and its progressing towards tumorigenesis. *Biochem. Biophys. Res. Commun.* 357: 1084-1089.
3. Coccola, C., et al. 2009. Isolation of canine mammary cells with stem cell properties and tumour-initiating potential. *Reprod. Domest. Anim.* 44: 214-217.
4. Li, J., et al. 2011. S100A expression in normal corneal-limbal epithelial cells and ocular surface squamous cell carcinoma tissue. *Mol. Vis.* 17: 2263-2271.
5. Cai, B.H., et al. 2012. A half-site of the p53-binding site on the keratin 14 promoter is specifically activated by p63. *J. Biochem.* 152: 99-110.

RESEARCH USE

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