

# Cytokeratin 5/14 (2Q1049): sc-70922

## BACKGROUND

Cytokeratins are a subfamily of intermediate filament keratins that are characterized by a remarkable biochemical diversity, which is represented in human epithelial tissues by at least 20 different polypeptides. Cytokeratins range in isoelectric range between 4.9 and 7.8. Cytokeratin 1 has the highest molecular weight, while Cytokeratin 19 has the lowest molecular weight. The Cytokeratins are divided into the type I and type II subgroups. Type II family members comprise the basic to neutral members, Cytokeratins 1-8, while the type I group comprises the acidic members, Cytokeratins 9-20. Various epithelia in the human body usually express cytokeratins which are characteristic of the type of epithelium and related to the degree of maturation or differentiation within said epithelium. Cytokeratin subtype expression patterns are used to an increasing extent in the distinction of different types of epithelial malignancies. Cytokeratin 4 is expressed in differentiated layers of the mucosal and esophageal epithelia along with Cytokeratin 13.

## REFERENCES

1. de Berker, D., Dean, D., Leigh, I.M. and Burge, S. 1995. Keratin expression in discoid lupus erythematosus. *Exp. Dermatol.* 4: 350-356.
2. Nagao-Watanabe, M., Fukao, T., Matsui, E., Kaneko, H., Inoue, R., Kawamoto, N., Kasahara, K., Nagai, M., Ichiki, Y., Kitajima, Y. and Kondo, N. 2004. Identification of somatic and germline mosaicism for a keratin 5 mutation in epidermolysis bullosa simplex in a family of which the proband was previously regarded as a sporadic case. *Clin. Genet.* 66: 236-238.
3. D'Alessandro, M., Morley, S.M., Ogden, P.H., Liovic, M., Porter, R.M. and Lane, E.B. 2004. Functional improvement of mutant keratin cells on addition of Desmin: an alternative approach to gene therapy for dominant diseases. *Gene Ther.* 11: 1290-1295.
4. Abd El-Rehim, D.M., Pinder, S.E., Paish, C.E., Bell, J., Blamey, R.W., Robertson, J.F., Nicholson, R.I. and Ellis, I.O. 2004. Expression of luminal and basal cytokeratins in human breast carcinoma. *J. Pathol.* 203: 661-671.
5. Csikos, M., Szalai, Z., Becker, K., Sebok, B., Schneider, I., Horvath, A. and Karpati, S. 2004. Novel keratin 14 gene mutations in patients from Hungary with epidermolysis bullosa simplex. *Exp. Dermatol.* 13: 185-191.
6. Smith, F.J., Morley, S.M. and McLean, W.H. 2004. Novel mechanism of revertant mosaicism in Dowling-Meara epidermolysis bullosa simplex. *J. Invest. Dermatol.* 122: 73-77.
7. Pfendner, E.G., Sadowski, S.G. and Uitto, J. 2005. Epidermolysis bullosa simplex: recurrent and *de novo* mutations in the KRT5 and KRT14 genes, phenotype/genotype correlations, and implications for genetic counseling and prenatal diagnosis. *J. Invest Dermatol.* 125: 239-243.
8. Rugg, E.L., Horn, H.M., Smith, F.J., Wilson, N.J., Hill, A.J., Magee, G.J., Shemanko, C.S., Baty, D.U., Tidman, M.J. and Lane, E.B. 2006. Epidermolysis bullosa simplex in Scotland caused by a spectrum of keratin mutations. *J. Invest Dermatol.* 127: 574-580.
9. Yasukawa, K., Sawamura, D., Goto, M., Nakamura, H., Jung, S.Y., Kim, S.C. and Shimizu, H. 2006. Epidermolysis bullosa simplex in Japanese and Korean patients: genetic studies in 19 cases. *Br. J. Dermatol.* 155: 313-317.

## CHROMOSOMAL LOCATION

Genetic locus: KRT5 (human) mapping to 12q13.13, KRT14 (human) mapping to 17q21.2.

## SOURCE

Cytokeratin 5/14 (2Q1049) is a mouse monoclonal antibody raised against foreskin keratinocytes of human origin.

## PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Cytokeratin 5/14 (2Q1049) is recommended for detection of Cytokeratin 5/14 of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Cytokeratin 5: 58 kDa.

Molecular Weight of Cytokeratin 14: 50 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## 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](http://www.scbt.com) for detailed protocols and support products.

## CONJUGATES

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