

Cytokeratin 12 (L-20): sc-17099

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 are useful markers of tissue differentiation, and Cytokeratin 12 is a distinct marker of tissue differentiation in the developing cornea. Cytokeratin 12 and Cytokeratin 3 are expressed in the corneal epithelium, where Cytokeratin 12 provides structural integrity to an otherwise fragile cornea. Human Cytokeratin 12 gene mutations cause Meesmann's corneal dystrophy, an autosomal dominant disorder characterized by corneal epithelia fragility and intra-epithelial microcysts.

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. Liu, C.Y., et al. 1993. Cornea-specific expression of K12 keratin during mouse development. *Curr. Eye Res.* 12: 963-974.

CHROMOSOMAL LOCATION

Genetic locus: KRT12 (human) mapping to 17q21.2.

SOURCE

Cytokeratin 12 (L-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Cytokeratin 12 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-17099 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Cytokeratin 12 (L-20) is recommended for detection of Cytokeratin 12 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for Cytokeratin 12 siRNA (h): sc-43306, Cytokeratin 12 shRNA Plasmid (h): sc-43306-SH and Cytokeratin 12 shRNA (h) Lentiviral Particles: sc-43306-V.

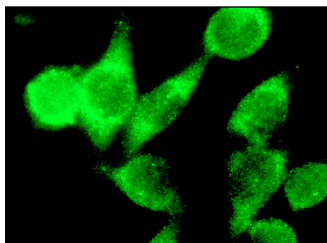
Molecular Weight of Cytokeratin 12: 54 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or human colon extract: sc-363757.

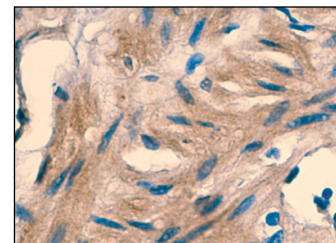
STORAGE

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

DATA



Cytokeratin 12 (L-20): sc-17099. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization.



Cytokeratin 12 (L-20): sc-17099. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoskeletal and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Boehlke, C.S., et al. 2004. Cytokeratin 12 in human ocular surface epithelia is the antigen reactive with a commercial anti-G α_q antibody. *Mol. Vis.* 10: 867-873.
2. Mimura, T., et al. 2005. Ultraviolet transmittance of human limbal epithelial cells cultured on human amniotic membranes. *Curr. Eye Res.* 30: 555-561.
3. Li, W., et al. 2006. Basement membrane dissolution and reassembly by limbal corneal epithelial cells expanded on amniotic membrane. *Invest. Ophthalmol. Vis. Sci.* 47: 2381-2389.
4. Ahenkorah, J., et al. 2009. Immunofluorescence confocal laser scanning microscopy and immuno-electron microscopic identification of keratins in human materno-foetal interaction zone. *J. Cell. Mol. Med.* 13: 735-748.
5. Barbaro, V., et al. 2009. Reconstruction of a human hemi-cornea through natural scaffolds compatible with the growth of corneal epithelial stem cells and stromal keratocytes. *Mol. Vis.* 15: 2084-2093.
6. Barbaro, V., et al. 2010. Evaluation of ocular surface disorders: a new diagnostic tool based on impression cytology and confocal laser scanning microscopy. *Br. J. Ophthalmol.* 94: 926-932.
7. Mimura, T., et al. 2010. Isolation of adult progenitor cells with neuronal potential from rabbit corneal epithelial cells in serum- and feeder layer-free culture conditions. *Mol. Vis.* 16: 1712-1719.
8. Di Iorio, E., et al. 2010. Localization and expression of CHST6 and keratan sulfate proteoglycans in the human cornea. *Exp. Eye Res.* 91: 293-299.
9. Di Iorio, E., et al. 2012. Limbal stem cell deficiency and ocular phenotype in ectrodactyly-ectodermal dysplasia-clefting syndrome caused by p63 mutations. *Ophthalmology* 119: 74-83.

RESEARCH USE

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