

# Cytokeratin 12 (L-15): sc-17101

## 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  $\alpha$ -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.

## CHROMOSOMAL LOCATION

Genetic locus: KRT12 (human) mapping to 17q21.2; Krt12 (mouse) mapping to 11 D.

## SOURCE

Cytokeratin 12 (L-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Cytokeratin 12 of mouse origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-17101 P, (100  $\mu$ 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 12 (L-15) is recommended for detection of Cytokeratin 12 of mouse, rat and, to a lesser extent, human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (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 siRNA (m): sc-43307, Cytokeratin 12 shRNA Plasmid (h): sc-43306-SH, Cytokeratin 12 shRNA Plasmid (m): sc-43307-SH, Cytokeratin 12 shRNA (h) Lentiviral Particles: sc-43306-V and Cytokeratin 12 shRNA (m) Lentiviral Particles: sc-43307-V.

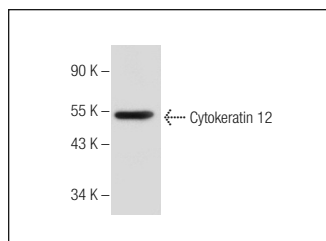
Molecular Weight of Cytokeratin 12: 54 kDa.

Positive Controls: mouse eye tissue extract: sc-364241.

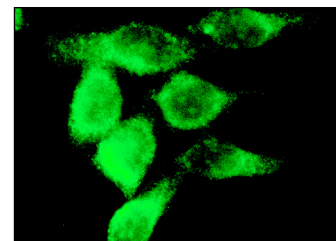
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



Cytokeratin 12 (L-15): sc-17101. Western blot analysis of Cytokeratin 12 expression in mouse eye tissue extract.



Cytokeratin 12 (L-15): sc-17101. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization.

## SELECT PRODUCT CITATIONS

- Boehlke, C.S., et al. 2004. Cytokeratin 12 in human ocular surface epithelia is the antigen reactive with a commercial anti-G $\alpha_q$  antibody. *Mol. Vis.* 10: 867-873.
- Dorá, N., et al. 2008. PAX6 dosage effects on corneal development, growth, and wound healing. *Dev. Dyn.* 237: 1295-1306.
- Chen, Y., et al. 2009. Conditional deletion of Cited2 results in defective corneal epithelial morphogenesis and maintenance. *Dev. Biol.* 334: 243-252.
- Ou, J., et al. 2010. Cytoskeletal and cell adhesion defects in wounded and Pax6<sup>+/-</sup> corneal epithelia. *Invest. Ophthalmol. Vis. Sci.* 51: 1415-1423.
- Kubota, M., et al. 2010. The anti-oxidative role of ABCG2 in corneal epithelial cells. *Invest. Ophthalmol. Vis. Sci.* 51: 5617-5622.
- Carmona, F.D., et al. 2010. Development of the cornea of true moles (*Talpidae*): morphogenesis and expression of PAX6 and cytokeratins. *J. Anat.* 217: 488-500.
- Amirjamshidi, H., et al. 2011. Limbal fibroblast conditioned media: a non-invasive treatment for limbal stem cell deficiency. *Mol. Vis.* 17: 658-666.
- Lu, H., et al. 2012. Notch signaling promotes the corneal epithelium wound healing. *Mol. Vis.* 18: 403-411.

## RESEARCH USE

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