

Cytokeratin 12 (E-8): sc-515882

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.
3. Marceau, N. and Loranger, A. 1995. Cytokeratin expression, fibrillar organization and subtle function in liver cells. *Biochem. Cell Biol.* 73: 619-625.
4. Fuchs, E. 1995. Keratins and the skin. *Annu. Rev. Cell Dev. Biol.* 11: 123-153.

CHROMOSOMAL LOCATION

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

SOURCE

Cytokeratin 12 (E-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1-22 at the N-terminus of Cytokeratin 12 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cytokeratin 12 (E-8) is available conjugated to agarose (sc-515882 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515882 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515882 PE), fluorescein (sc-515882 FITC), Alexa Fluor[®] 488 (sc-515882 AF488), Alexa Fluor[®] 546 (sc-515882 AF546), Alexa Fluor[®] 594 (sc-515882 AF594) or Alexa Fluor[®] 647 (sc-515882 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-515882 AF680) or Alexa Fluor[®] 790 (sc-515882 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

Cytokeratin 12 (E-8) is recommended for detection of Cytokeratin 12 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) 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.

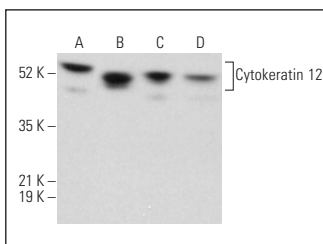
Molecular Weight of Cytokeratin 12: 54 kDa.

Positive Controls: ARPE-19 whole cell lysate: sc-364357, SK-MEL-24 whole cell lysate: sc-364259 or Y79 cell lysate: sc-2240.

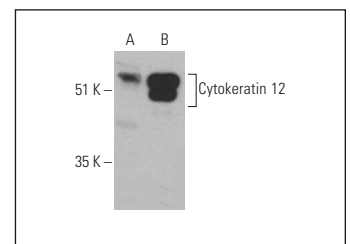
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 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 m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



Cytokeratin 12 (E-8): sc-515882. Western blot analysis of Cytokeratin 12 expression in Y79 (A), SJRH30 (B), A-375 (C) and SK-MEL-24 (D) whole cell lysates.



Cytokeratin 12 (E-8): sc-515882. Western blot analysis of Cytokeratin 12 expression in ARPE-19 (A) and Y79 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Shi, L., et al. 2020. Keratin 12 mRNA expression could serve as an early corneal marker for limbal explant cultures. *Cytotechnology* 72: 239-245.
2. Efrain, Y., et al. 2020. Alterations in corneal biomechanics underlie early stages of autoimmune-mediated dry eye disease. *J. Autoimmun.* E-published.

STORAGE

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