SANTA CRUZ BIOTECHNOLOGY, INC.

Cytokeratin 14 (LL001): sc-53253

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

CHROMOSOMAL LOCATION

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

SOURCE

Cytokeratin 14 (LL001) is a mouse monoclonal antibody raised against the C-terminus of Cytokeratin 14 of human origin.

PRODUCT

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

Cytokeratin 14 (LL001) is available conjugated to agarose (sc-53253 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53253 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53253 PE), fluorescein (sc-53253 FITC), Alexa Fluor® 488 (sc-53253 AF488), Alexa Fluor® 546 (sc-53253 AF546), Alexa Fluor® 594 (sc-53253 AF594) or Alexa Fluor® 647 (sc-53253 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53253 AF680) or Alexa Fluor® 790 (sc-53253 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cytokeratin 14 (LL001) is recommended for detection of Cytokeratin 14 of mouse, rat, human and porcine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

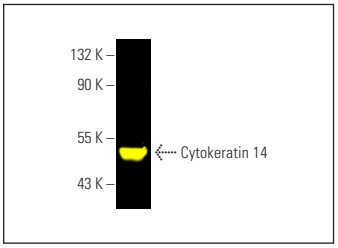
Molecular Weight of Cytokeratin 14: 50 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

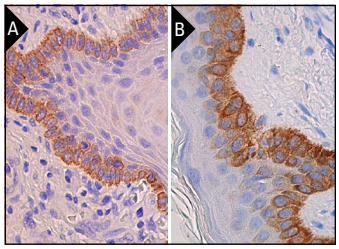
STORAGE

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

DATA



Cytokeratin 14 (LL001) Alexa Fluor® 488: sc-53253 AF488. Direct fluorescent western blot analysis of Cytokeratin 14 expression in A-431 whole cell lysate. Blocked with UltraCruz® Blocking Reagent: sc-516214.



Cytokeratin 14 (LL001): sc-53253. Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic and membrane staining of basal squamous epithelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of melanocytes and basal cells (**B**).

SELECT PRODUCT CITATIONS

1. Zhang, J.Y., et al. 2007. Tumor necrosis factor receptor 1/c-Jun-NH_2-kinase signaling promotes human neoplasia. Cancer Res. 67: 3827-3834.
2. Pupo, M., et al. 2013. The nuclear localization signal is required for nuclear GPER translocation and function in breast cancer-associated fibroblasts (CAFs). Mol. Cell. Endocrinol. 376: 23-32.
3. Shi, G., et al. 2014. Clinicopathological features and expression of four keratins (K10, K14, K17 and K19) in six cases of eruptive vellus hair cysts. Clin. Exp. Dermatol. 39: 496-499.
4. Suzuki, D., et al. 2015. The carboxy-terminus of p63 links cell cycle control and the proliferative potential of epidermal progenitor cells. Development 142: 282-290.
5. Loyola, A.M., et al. 2016. Ameloblastic carcinoma: a Brazilian collaborative study of 17 cases. Histopathology 69: 687-701.
6. Min, M., et al. 2017. Role of Keratin 24 in human epidermal keratinocytes. PLoS ONE 12: e0174626.
7. Adorno-Farias, D., et al. 2018. Ameloblastoma with adenoid features: a series of eight cases. Acta Histochem. 120: 468-476.
8. Duchatelet, S., et al. 2019. Mutations in PERP cause dominant and recessive keratoderma. J. Invest. Dermatol. 139: 380-390.
9. Feng, D., et al. 2020. CBP-mediated Wnt3a/β-catenin signaling promotes cervical oncogenesis initiated by Piwil2. Neoplasia 23: 1-11.
10. Tokheim, C., et al. 2021. Systematic characterization of mutations altering protein degradation in human cancers. Mol. Cell 81: 1292-1308.e11.

RESEARCH USE

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