SANTA CRUZ BIOTECHNOLOGY, INC.

Cytokeratin 1 (4D12B3): sc-65999

BACKGROUND

Cytokeratins comprise a diverse group of intermediate filament proteins (IFPs) that are expressed as pairs in both keratinized and non-keratinized epithelial tissue. Cytokeratins constitute up to 85% of a mature keratinocytes in the vertebrate epidermis. Cytokeratins play a critical role in differentiation and tissue specialization, and they 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 they aid in the characterization of malignant tumors. Cytokeratin 1 is highly expressed in several malignancies including epithelioid hemangioendohtheliomas, angiosarcomas, schwannomas, epithelioid sarcomas and synodal sarcomas. The gene encoding human Cytokeratin 1 maps to chromosome 12q13.13. Mutations in the gene encoding human Cytokeratin 1 lead to abnormal filament associations and epidermolytic hyperkeratosis.

CHROMOSOMAL LOCATION

Genetic locus: KRT1 (human) mapping to 12q13.13; Krt1 (mouse) mapping to 15 F3.

SOURCE

Cytokeratin 1 (4D12B3) is a mouse monoclonal antibody raised against purified truncated recombinant Cytokeratin 1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cytokeratin 1 (4D12B3) is available conjugated to agarose (sc-65999 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-65999 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-65999 PE), fluorescein (sc-65999 FITC), Alexa Fluor® 488 (sc-65999 AF488), Alexa Fluor® 546 (sc-65999 AF546), Alexa Fluor® 594 (sc-65999 AF594) or Alexa Fluor® 647 (sc-65999 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-65999 AF680) or Alexa Fluor® 790 (sc-65999 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cytokeratin 1 (4D12B3) is recommended for detection of Cytokeratin 1 of mouse, rat and human 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 1 siRNA (h): sc-43285, Cytokeratin 1 siRNA (m): sc-142762, Cytokeratin 1 shRNA Plasmid (h): sc-43285-SH, Cytokeratin 1 shRNA Plasmid (m): sc-142762-SH, Cytokeratin 1 shRNA (h) Lentiviral Particles: sc-43285-V and Cytokeratin 1 shRNA (m) Lentiviral Particles: sc-142762-V.

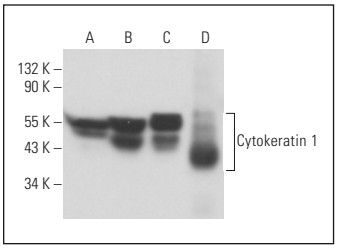
Molecular Weight of Cytokeratin 1: 67 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, SW480 cell lysate: sc-2219 or A-431 whole cell lysate: sc-2201.

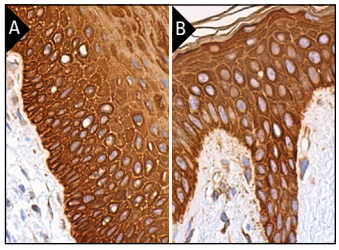
STORAGE

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

DATA



Cytokeratin 1 (4D12B3): sc-65999. Western blot analysis of Cytokeratin 1 expression in HeLa (**A**), SW480 (**B**) and A-431 (**C**) whole cell lysates and mouse stomach tissue extract (**D**).



Cytokeratin 1 (4D12B3): sc-65999. Immunoperoxidase staining of formalin fixed, paraffin-embedded human uterine cervix tissue showing cytoplasmic staining of squamous epithelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes, fibroblasts, Langerhans cells and melanocytes (**B**).

SELECT PRODUCT CITATIONS

1. Vivo, M., et al. 2009. Downregulation of ΔNp63α in keratinocytes by $p14^{ARF}$-mediated SUMO-conjugation and degradation. Cell Cycle 8: 3545-3551.
2. Di Costanzo, A., et al. 2011. A dominant mutation etiologic for human tricho-dento-osseous syndrome impairs the ability of DLX3 to downregulate ΔNp63α. J. Cell. Physiol. 226: 2189-2197.
3. Nittayananta, W., et al. 2012. Changes in oral cytokeratin expression in HIV-infected subjects with long-term use of HAART. Oral Dis. 18: 793-801.
4. Troiano, A., et al. 2015. Y-box binding protein-1 is part of a complex molecular network linking ΔNp63α to the PI3K/Akt pathway in cutaneous squamous cell carcinoma. J. Cell. Physiol. 230: 2067-2074.
5. di Martino, O., et al. 2016. ΔNp63α controls YB-1 protein stability: evidence on YB-1 as a new player in keratinocyte differentiation. Genes Cells 21: 648-660.
6. Shin, J.M., et al. 2017. Targeted deletion of Crif1 in mouse epidermis impairs skin homeostasis and hair morphogenesis. Sci. Rep. 7: 44828.
7. Chamcheu, J.C., et al. 2019. Fisetin, a 3,7,3',4'-tetrahydroxyflavone inhibits the PI3K/Akt/mTOR and MAPK pathways and ameliorates psoriasis pathology in 2D and 3D organotypic human inflammatory skin models. Cells 8: 1089.
8. Reneker, L.W., et al. 2020. Histopathology and selective biomarker expression in human meibomian glands. Br. J. Ophthalmol. 104: 999-1004.

RESEARCH USE

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