

Basic Cytokeratin (AE3): sc-57004

BACKGROUND

Cytokeratins comprise a diverse group of intermediate filament proteins that are expressed in both keratinized and non-keratinized epithelial tissue. The Cytokeratin proteins play a critical role in differentiation, as well as tissue specialization and function, to maintain the overall structural integrity of epithelial cells. Cytokeratins are also useful markers in identifying the origin of metastatic tumors. There are two types of Cytokeratins: types I and II. The type I family is comprised of the acidic members, Cytokeratins 9-20, and the type II family is comprised of the basic to neutral members, Cytokeratins 1-8. The formation of intermediate filaments requires the pairing of at least one acidic and one Basic Cytokeratin. The genes encoding human type II/Basic Cytokeratins are located in a cluster on chromosome 12q13.13. Relative to their type I partner, Basic Cytokeratins are initially expressed in differentiating epithelia.

REFERENCES

1. Rosenberg, M., et al. 1991. Three epidermal and one simple epithelial type II keratin genes map to human chromosome 12. *Cytogenet. Cell Genet.* 57: 33-38.
2. 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.

SOURCE

Basic Cytokeratin (AE3) is a mouse monoclonal antibody raised against epidermal keratins of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Basic Cytokeratin (AE3) is available conjugated to agarose (sc-57004 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-57004 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-57004 PE), fluorescein (sc-57004 FITC), Alexa Fluor® 488 (sc-57004 AF488), Alexa Fluor® 546 (sc-57004 AF546), Alexa Fluor® 594 (sc-57004 AF594) or Alexa Fluor® 647 (sc-57004 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-57004 AF680) or Alexa Fluor® 790 (sc-57004 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Basic Cytokeratin (AE3) is recommended for detection of Basic (type II) Cytokeratins of mouse, rat, human and bovine 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).

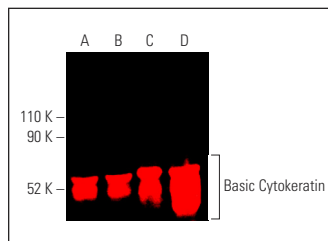
Molecular Weight of Basic Cytokeratin: 50-70 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, A-431 whole cell lysate: sc-2201 or SK-BR-3 cell lysate: sc-2218.

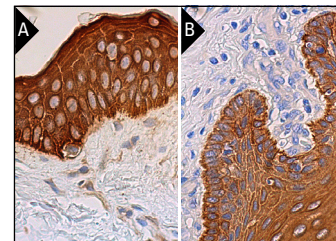
STORAGE

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

DATA



Basic Cytokeratin (AE3): sc-57004. Near-Infrared western blot analysis of Basic Cytokeratin expression in A-431 (A), Hep G2 (B), SK-BR-3 (C) and MCF7 (D) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG Fc BP-CFL 790: sc-533658.



Basic Cytokeratin (AE3): sc-57004. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes, fibroblasts and melanocytes (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic staining of squamous epithelial cells (B).

SELECT PRODUCT CITATIONS

1. Kano, S., et al. 2008. Tripartite motif protein 32 facilitates cell growth and migration via degradation of Abl-interactor 2. *Cancer Res.* 68: 5572-5580.
2. Brockmann, T., et al. 2014. Clinicopathology of graft detachment after Descemet's membrane endothelial keratoplasty. *Acta Ophthalmol.* 92: e556-e561.
3. Chen, Y., et al. 2015. Valproic acid-induced histone acetylation suppresses CYP19 gene expression and inhibits the growth and survival of endometrial stromal cells. *Int. J. Mol. Med.* 36: 725-732.
4. Wang, T., et al. 2017. Fibulin-4 is associated with prognosis of endometrial cancer patients and inhibits cancer cell invasion and metastasis via Wnt/β-catenin signaling pathway. *Oncotarget* 8: 18991-19012.
5. Brockmann, T., et al. 2018. Primary Descemet's membrane endothelial keratoplasty for fuchs endothelial dystrophy versus bullous keratopathy: histopathology and clinical results. *Curr. Eye Res.* 43: 1221-1227.
6. Shukla, V., et al. 2019. Microtubule depolymerization attenuates WNT4/CaMKIIα signaling in mouse uterus and leads to implantation failure. *Reproduction* 158: 47-59.
7. Singh, N., et al. 2021. The long noncoding RNA H19 regulates tumor plasticity in neuroendocrine prostate cancer. *Nat. Commun.* 12: 7349.
8. Yang, L., et al. 2022. VPS9D1-AS1 overexpression amplifies intratumoral TGF-β signaling and promotes tumor cell escape from CD8⁺ T cell killing in colorectal cancer. *Elife* 11: e79811.

RESEARCH USE

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

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