pan-Cytokeratin (B311.1): sc-58826

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BIOTECHNOLOGY

The Power to Question

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 play a critical role in differentiation and tissue specialization and function to maintain the overall structural integrity of epithelial cells. Cytokeratins have been found to be useful markers of tissue differentiation which is directly applicable to the characterization of malignant tumors. For example, cytokeratins 10 and 13 are expressed highly in a subset of squamous cell carcinomas while cytokeratin 18 is expressed in a majority of adenocarcinomas and basal cell carcinomas.

REFERENCES

1. Gatter, K.C., et al. 1985. Human lung tumours: a correlation of antigenic profile with histological type. Histopathology 9: 805-823.

2. Pulford, K.A., et al. 1985. The characterization of two monoclonal anti-keratin antibodies and their use in the study of epithelial disorders. Histopathology 9: 825-840.

3. Broekaert, D., et al. 1990. An investigation of cytokeratin expression in skin epithelial cysts and some uncommon types of cystic tumours using chain-specific antibodies. Arch. Dermatol. Res. 282: 383-391.

SOURCE

pan-Cytokeratin (B311.1) is a mouse monoclonal antibody raised against a pan-Cytokeratin fraction isolated from A-431 epidermoid carcinoma cell line 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.

STORAGE

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

RESEARCH USE

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

APPLICATIONS

pan-Cytokeratin (B311.1) is recommended for detection of Cytokeratin 4, 5, 6, 8, 10, 13 and 18 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of pan-Cytokeratin: 40-59 kDa.

Positive Controls: A549 cell lysate: sc-2413, A-431 whole cell lysate: sc-2201 or Hep G2 cell lysate: sc-2227.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA
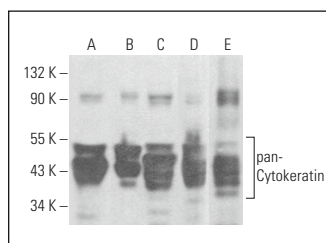
pan-Cytokeratin (B311.1): sc-58826. Western blot analysis of pan-Cytokeratin expression in A549 (**A**), A-431 (**B**), KNRK (**C**) and Hep G2 (**D**) whole cell lysates and rat colon tissue extract (**E**).
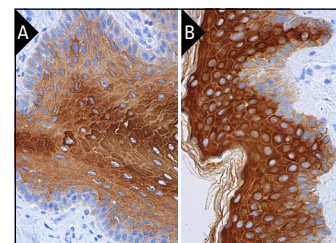
pan-Cytokeratin (B311.1): sc-58826. Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic and membrane staining of squamous epithelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes and Langerhans cells (**B**).

SELECT PRODUCT CITATIONS

1. Nie, C., et al. 2011. Locally administered adipose-derived stem cells accelerate wound healing through differentiation and vasculogenesis. Cell Transplant. 20: 205-216.

2. Kim, H., et al. 2012. Enhanced wound healing effect of canine adipose-derived mesenchymal stem cells with low-level laser therapy in athymic mice. J. Dermatol. Sci. 68: 149-156.

3. Ordóñez, N.G. 2013. Broad-spectrum immunohistochemical epithelial markers: a review. Hum. Pathol. 44: 1195-1215.

4. Shi, R., et al. 2020. Role and effect of vein-transplanted human umbilical cord mesenchymal stem cells in the repair of diabetic foot ulcers in rats. Acta Biochim. Biophys. Sin. 52: 620-630.

5. Becerril, C., et al. 2021. Mesenchymal-epithelial transition in fibroblasts of human normal lungs and interstitial lung diseases. Biomolecules 11: 378.

CONJUGATES

See **pan-Cytokeratin (C11): sc-8018** for pan-Cytokeratin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.