

# Keratin 81 (36-Z): sc-100929

## BACKGROUND

The keratin multigene family is made of the “soft” epithelial cytokeratins and the “hard” hair keratins. While the epithelial cytokeratins are involved in the layering and formation of epithelia, the hair keratins are responsible for creating nails and hair. There are two types of hair keratins: the acidic type I hair keratin proteins and the basic/neutral type II hair keratin proteins. Keratin 81, also known as KRTHB1, MLN137, HB1 or Hb-1, is a 505 amino acid type II hair keratin that is abundantly expressed in the cortex of growing hair. Like other type II hair keratins, Keratin 81 exists as a heterotetramer (comprised of two type I and two type II keratins) that functions in the assembly of hair and nail fibers. Defects in the gene encoding Keratin 81 are the cause of monilethrix, an autosomal dominant hair disorder characterized by patches of thin, easily breakable hair on the scalp, eyebrows and eyelashes.

## REFERENCES

1. Rogers, M.A., et al. 1995. Sequence data and chromosomal localization of human type I and type II hair keratin genes. *Exp. Cell Res.* 220: 357-362.
2. Winter, H., et al. 1997. A new mutation in the type II hair cortex keratin hHb1 involved in the inherited hair disorder monilethrix. *Hum. Genet.* 101: 165-169.
3. Bowden, P.E., et al. 1998. Characterization and chromosomal localization of human hair-specific keratin genes and comparative expression during the hair growth cycle. *J. Invest. Dermatol.* 110: 158-164.

## CHROMOSOMAL LOCATION

Genetic locus: KRT81 (human) mapping to 12q13.13.

## SOURCE

Keratin 81 (36-Z) is a mouse monoclonal antibody raised against recombinant Keratin 81 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Keratin 81 (36-Z) is recommended for detection of Keratin 81 of 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), immunohistochemistry (including paraffin-embedded sections) (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 Keratin 81 siRNA (h): sc-95788, Keratin 81 shRNA Plasmid (h): sc-95788-SH and Keratin 81 shRNA (h) Lentiviral Particles: sc-95788-V.

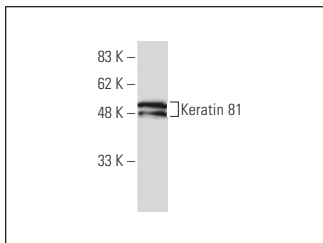
Molecular Weight of Keratin 81: 55 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

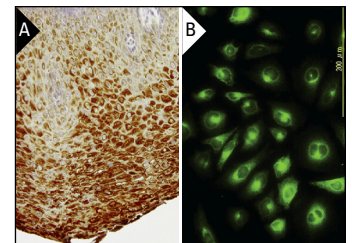
## RECOMMENDED SUPPORT REAGENTS

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



Keratin 81 (36-Z): sc-100929. Western blot analysis of Keratin 81 expression in Hep G2 whole cell lysate.



Keratin 81 (36-Z): sc-100929. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human esophagus tissue showing cytoplasmic localization (A). Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing membrane and cytoplasmic localization (B).

## SELECT PRODUCT CITATIONS

1. Campayo, M., et al. 2011. A dual role for KRT81: a miR-SNP associated with recurrence in non-small-cell lung cancer and a novel marker of squamous cell lung carcinoma. *PLoS ONE* 6: e22509.
2. Muckenhuber, A., et al. 2018. Pancreatic ductal adenocarcinoma subtyping using the biomarkers hepatocyte nuclear factor-1A and cytokeratin-81 correlates with outcome and treatment response. *Clin. Cancer Res.* 24: 351-359.
3. Dantes, Z., et al. 2020. Implementing cell-free DNA of pancreatic cancer patient-derived organoids for personalized oncology. *JCI Insight* 5: e137809.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.