

basonuclin (1F4): sc-517114

BACKGROUND

The zinc finger protein, basonuclin, is a putative rDNA transcription factor with highly restricted tissue distribution. Basonuclin is abundantly expressed in keratinocytes of the basal layer of the epidermis, the outer sheath of hair follicles and in the germ cells of the testis and ovary. Although basonuclin is associated with chromatin throughout the cell cycle, including mitosis, it disappears when cells become post-mitotic. In the epidermis, basonuclin, which is mainly localized to the cytoplasm, translocates to basal cell nuclei during different stages of keratinocyte growth. Basonuclin may enhance rRNA synthesis by elevating transcription from an rDNA promoter and inhibiting RNA polymerase I transcription through its zinc finger domain. Therefore, basonuclin may be a cell-type-specific transcription factor for rDNA transcription.

REFERENCES

1. Tseng, H., et al. 1998. Basonuclin, a zinc finger protein associated with epithelial expansion and proliferation. *Front. Biosci.* 3: 985-988.
2. Mahoney, M.G., et al. 1998. Translocation of the zinc finger protein basonuclin from the mouse germ cell nucleus to the midpiece of the spermatozoon during spermiogenesis. *Biol. Reprod.* 59: 388-394.
3. Luchi, S., et al. 1999. Basonuclin, a zinc finger protein of keratinocytes and reproductive germ cells, binds to the rRNA gene promoter. *Proc. Natl. Acad. Sci. USA* 96: 9628-9632.
4. Tseng, H., et al. 1999. Basonuclin in murine corneal and lens epithelia correlates with cellular maturation and proliferative ability. *Differentiation* 65: 221-227.
5. Tseng, H., et al. 1999. Basonuclin is associated with the ribosomal RNA genes on human keratinocyte mitotic chromosomes. *J. Cell Sci.* 112: 3039-3047.
6. Luchi, S., et al. 2000. Alternative subcellular locations of keratinocyte basonuclin. *Exp. Dermatol.* 9: 178-184.
7. Tian, Q., et al. 2001. Function of basonuclin in increasing transcription of the ribosomal RNA genes during mouse oogenesis. *Development* 128: 407-416.
8. Wang, J., et al. 2006. Search for basonuclin target genes. *Biochem. Biophys. Res. Commun.* 348: 1261-1271.
9. Ma, J., et al. 2006. Basonuclin: a novel mammalian maternal-effect gene. *Development* 133: 2053-2062.

CHROMOSOMAL LOCATION

Genetic locus: BNC1 (human) mapping to 15q25.2.

SOURCE

basonuclin (1F4) is a mouse monoclonal antibody raised against amino acids 599-705 representing partial length basonuclin of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

basonuclin (1F4) is recommended for detection of basonuclin 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for basonuclin siRNA (h): sc-37708, basonuclin shRNA Plasmid (h): sc-37708-SH and basonuclin shRNA (h) Lentiviral Particles: sc-37708-V.

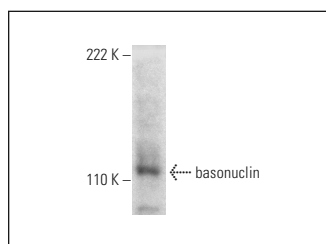
Molecular Weight of basonuclin: 120 kDa.

Positive Controls: CCD-1064Sk cell lysate: sc-2263.

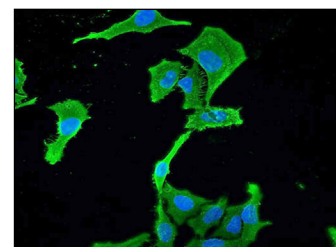
RECOMMENDED SUPPORT REAGENTS

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.

DATA



basonuclin (1F4): sc-517114. Western blot analysis of basonuclin expression in CCD-1064Sk whole cell lysate.



basonuclin (1F4): sc-517114. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Gao, Y., et al. 2021. Upregulation of basonuclin1 is associated with p63-involved epithelial barrier impairment and type-2 helper T-cell inflammation in chronic rhinosinusitis with nasal polyps. *Int. Arch. Allergy Immunol.* 182: 1046-1057.

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.