

KRTAP3-2/3 (C-13): sc-131582

BACKGROUND

Hair is a structure that is unique to mammals. It plays an important role in the retention of heat, as well as sexual dimorphism, attraction of mates and protection of skin. The major components of hair are α -keratins and keratin-associated proteins (KRTAPs or KAPs), each of which are encoded by multi-gene families. Hair keratins form an intermediate filament (IF) network, which is embedded in an interfilamentous matrix consisting of KRTAPs. KRTAPs comprise three major groups, which are essential for the formation of rigid and resistant hair shafts through disulfide bond cross-linking or hydrophobic interactions with keratins. These groups are designated high cysteine (HS), which includes subfamilies 1, 2, 3, 10, 12, 16, 29 and 31, ultrahigh cysteine, including subfamilies 4, 5, 9, 17, 28, 30, 32 and 33, and high glycine-tyrosine (HGT), which includes subfamilies 6, 7, 8, 19, 20 and 21. In addition, subfamilies 11, 13, 24-27, 29, 34 and 35 have high serine content but relative low cysteine content. After further phylogenetic studies, subfamilies 14 and 15 have been grouped with subfamily 13 and subfamily 22 was combined with subfamily 19.

REFERENCES

- Powell, B.C., et al. 1991. Regulation of keratin gene expression in hair follicle differentiation. *Ann. N.Y. Acad. Sci.* 642: 1-20.
- Emonet, N., et al. 1997. Isolation and characterization of genomic clones of human sequences presumably coding for hair cysteine-rich proteins. *J. Dermatol. Sci.* 14: 1-11.
- Langbein, L., et al. 1999. The catalog of human hair keratins. I. Expression of the nine type I members in the hair follicle. *J. Biol. Chem.* 274: 19874-19884.
- Langbein, L., et al. 2001. The catalog of human hair keratins. II. Expression of the six type II members in the hair follicle and the combined catalog of human type I and II keratins. *J. Biol. Chem.* 276: 35123-35132.
- Maderson, P.F. 2003. Mammalian skin evolution: a reevaluation. *Exp. Dermatol.* 12: 233-236.
- Shimomura, Y. and Ito, M. 2005. Human hair keratin-associated proteins. *J. Investig. Dermatol. Symp. Proc.* 10: 230-233.
- Rogers, M.A., et al. 2006. Human hair keratin-associated proteins (KAPs). *Int. Rev. Cytol.* 251: 209-263.
- Wu, D.D., et al. 2008. Molecular evolution of the keratin associated protein gene family in mammals, role in the evolution of mammalian hair. *BMC Evol. Biol.* 8: 241.

CHROMOSOMAL LOCATION

Genetic locus: KRTAP3-2/KRTAP3-3 (human) mapping to 17q21.2.

SOURCE

KRTAP3-2/3 (C-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of KRTAP3-3 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-131582 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

KRTAP3-2/3 (C-13) is recommended for detection of KRTAP3-2 and KRTAP3-3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with other KRTAP family members.

KRTAP3-2/3 (C-13) is also recommended for detection of KRTAP3-2 and KRTAP3-3 in additional species, including equine.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.