SANTA CRUZ BIOTECHNOLOGY, INC.

BCMO1 (K-14): sc-163736

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Vitamin A and its derivatives (retinoids) play a critical role in various processes including vision, cell differentiation, embryonic development and normal physiological functions in children and adults. Vitamin A is also important for cell membrane and skin protection. BCMO1 (β-carotene 15,15'-monooxygenase 1), also known as β-carotene dioxygenase 1 (BCDO1) BCO, BCDO, BCMO or BCO1, is a 547 amino acid cytoplasmic enzyme essential for β-carotene metabolism to vitamin A, which catalyzes the cleavage of β-carotene at its 15,15-prime-double bond to form two molecules of retinal. Belonging to the carotenoid oxygenase family, BCMO1 is highly expressed in retinal pigment epithelium (RPE) and is also found in testis, kidney, liver, small intestine, colon and brain. The gene encoding BCMO1 maps to human chromosome 16q23.2, and defects in BCMO1 are known to cause autosomal dominant hypercarotenemia and vitamin A deficiency.

REFERENCES

1. Sharvill, D.E. 1970. Familial hypercarotinaemia and hypovitaminosis A. Proc. R. Soc. Med. 63: 605-606.
2. Wyss, A., et al. 2000. Cloning and expression of β,β-carotene 15,15'-dioxygenase. Biochem. Biophys. Res. Commun. 271: 334-336.
3. von Lintig, J. and Vogt, K. 2000. Filling the gap in vitamin A research. Molecular identification of an enzyme cleaving β-carotene to retinal. J. Biol. Chem. 275: 11915-11920.
4. Yan, W., et al. 2001. Cloning and characterization of a human β,β-carotene-15,15'-dioxygenase that is highly expressed in the retinal pigment epithelium. Genomics 72: 193-202.
5. Gong, X., et al. 2006. Cooperation between MEF-2 and PPARγ in human intestinal β,β-carotene 15,15'-monooxygenase gene expression. BMC Mol. Biol. 7: 7.
6. Lindqvist, A., et al. 2007. Loss-of-function mutation in carotenoid 15,15'-monooxygenase identified in a patient with hypercarotenemia and hypovitaminosis A. J. Nutr. 137: 2346-2350.

CHROMOSOMAL LOCATION

Genetic locus: BCMO1 (human) mapping to 16q23.2; Bcmo1 (mouse) mapping to 8 E1.

SOURCE

BCMO1 (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of BCMO1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-163736 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

BCMO1 (K-14) is recommended for detection of BCMO1 of mouse, rat and 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).

BCMO1 (K-14) is also recommended for detection of BCMO1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for BCMO1 siRNA (h): sc-93190, BCMO1 siRNA (m): sc-141677, BCMO1 shRNA Plasmid (h): sc-93190-SH, BCMO1 shRNA Plasmid (m): sc-141677-SH, BCMO1 shRNA (h) Lentiviral Particles: sc-93190-V and BCMO1 shRNA (m) Lentiviral Particles: sc-141677-V.

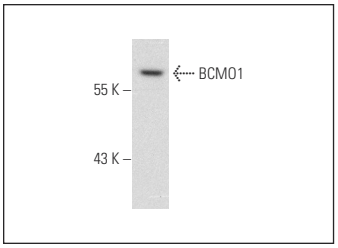
Molecular Weight of BCMO1: 63 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



BCMO1 (K-14): sc-163736. Western blot analysis of BCMO1 expression in Jurkat whole cell lysate.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.