

Biotin (BK-1/39): sc-53179

BACKGROUND

Biotin, a water-soluble B complex vitamin, is required by all organisms but can only be synthesized by yeasts, molds, algae, some plant species and bacteria. Biotin, a tetrahydrothiophene ring fused with an ureido (tetrahydro-imidazolone) ring, is important in the catalysis of essential metabolic reactions to synthesize fatty acids, to metabolize leucine and in gluconeogenesis. Human intestinal bacteria generally produce in excess of the body's daily Biotin requirement. The occurrence of Biotin in nature is widespread and, although extremely rare, Biotin deficiency is associated with dermatitis, nausea, loss of hair, depression, muscle pain and reproductive disturbances.

REFERENCES

- Kempner, E.S. and Miller, J.H. 1990. Direct effects of radiation on the Avidin-Biotin system. Absence of energy transfer. *J. Biol. Chem.* 265: 15776-15781.
- Elborough, K.M., et al. 1996. Biotin carboxyl carrier protein and carboxyl-transferase subunits of the multi-subunit form of acetyl-CoA carboxylase from *Brassica napus*: cloning and analysis of expression during oilseed rape embryogenesis. *Biochem. J.* 315: 103-112.
- Hollinshead, M., et al. 1997. Anti-Biotin antibodies offer superior organelle-specific labeling of mitochondria over Avidin or Streptavidin. *J. Histochem. Cytochem.* 45: 1053-1057.
- Cooper, K.M., et al. 1998. An immunohistochemical study of the distribution of Biotin in tissues of pigs and chickens. *Res. Vet. Sci.* 63: 219-225.
- Lu, C.S., et al. 2001. Immunohistochemical study of the distribution of endogenous Biotin and Biotin-binding enzymes in ductal structures of salivary gland tumours. *J. Oral Pathol.* 29: 445-451.

SOURCE

Biotin (BK-1/39) is a mouse monoclonal antibody raised against Biotin conjugated to haemocyanin of keyhole limpet origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Biotin (BK-1/39) is available conjugated to agarose (sc-53179 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53179 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53179 PE), fluorescein (sc-53179 FITC), Alexa Fluor® 488 (sc-53179 AF488), Alexa Fluor® 546 (sc-53179 AF546), Alexa Fluor® 594 (sc-53179 AF594) or Alexa Fluor® 647 (sc-53179 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53179 AF680) or Alexa Fluor® 790 (sc-53179 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

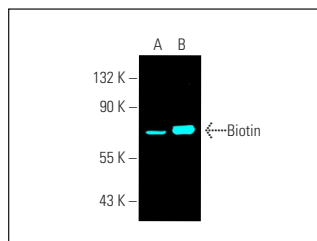
APPLICATIONS

Biotin (BK-1/39) is recommended for detection of Biotin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:100), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); permits the formation of antibody-Biotin complexes, thus enhancing the sensitivity of the detection system.

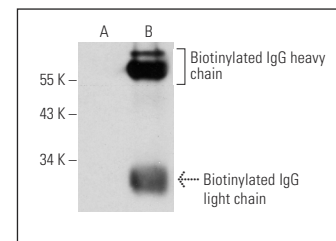
RECOMMENDED SUPPORT REAGENTS

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



Biotin (BK-1/39) Alexa Fluor® 647: sc-53179 AF647. Direct fluorescent western blot analysis of Biotin expression in U266 (A) and T-47D (B) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



Biotin (BK-1/39): sc-53179. Western blot analysis of normal (A) and Biotin conjugated (B) goat IgG.

SELECT PRODUCT CITATIONS

- Hu, J., et al. 2012. Promoter-associated small double-stranded RNA interacts with heterogeneous nuclear ribonucleoprotein A2/B1 to induce transcriptional activation. *Biochem. J.* 447: 407-416.
- Zhang, Y., et al. 2015. ROW1 maintains quiescent centre identity by confining WOX5 expression to specific cells. *Nat. Commun.* 6: 6003.
- Wu, H.L., et al. 2016. Demystifying the mechanistic and functional aspects of p21 gene activation with double-stranded RNAs in human cancer cells. *J. Exp. Clin. Cancer Res.* 35: 145.
- Zhou, H., et al. 2017. Hydrogen sulfide reduces RAGE toxicity through inhibition of its dimer formation. *Free Radic. Biol. Med.* 104: 262-271.
- Ali, Z., et al. 2022. Bio-SCAN: a CRISPR/dCas9-based lateral flow assay for rapid, specific, and sensitive detection of SARS-CoV-2. *ACS Synth. Biol.* 11: 406-419.

RESEARCH USE

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