SANTA CRUZ BIOTECHNOLOGY, INC.

BLVRA (F-1): sc-393385

BACKGROUND

In human liver cytosolic fractions, four forms of biliverdin reductase have been identified, including two biliverdin-IX β reductases and two biliverdin-IX α reductases, designated isozymes I and II and isozymes III and IV, respectively. Biliverdin reductase A (BLVRA), also designated biliverdin-IX α-reductase, belongs to the GFO/iIDH/MocA family and the biliverdin reductase subfamily. The gene that encodes this cytoplasmic protein maps to chromosome 7p14-cen. BLVRA reduces biliverdin IX α (the γ-methene bridge of the open tetrapyrrole) to bilirubin with the concomitant oxidation of an NADH or NADPH cofactor (bilirubin + $NADP^+$ = biliverdin + NADPH). BLVRA is expressed primarily in liver.

CHROMOSOMAL LOCATION

Genetic locus: BLVRA (human) mapping to 7p13; Blvra (mouse) mapping to 2 F1.

SOURCE

BLVRA (F-1) is a mouse monoclonal antibody raised against amino acids 75-296 mapping at the C-terminus of BLVRA of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

BLVRA (F-1) is available conjugated to agarose (sc-393385 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393385 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393385 PE), fluorescein (sc-393385 FITC), Alexa Fluor® 488 (sc-393385 AF488), Alexa Fluor® 546 (sc-393385 AF546), Alexa Fluor® 594 (sc-393385 AF594) or Alexa Fluor® 647 (sc-393385 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393385 AF680) or Alexa Fluor® 790 (sc-393385 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

BLVRA (F-1) is recommended for detection of BLVRA of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 BLVRA siRNA (h): sc-44650, BLVRA siRNA (m): sc-44651, BLVRA shRNA Plasmid (h): sc-44650-SH, BLVRA shRNA Plasmid (m): sc-44651-SH, BLVRA shRNA (h) Lentiviral Particles: sc-44650-V and BLVRA shRNA (m) Lentiviral Particles: sc-44651-V.

Molecular Weight of BLVRA: 37 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, A549 cell lysate: sc-2413 or DU 145 cell lysate: sc-2268.

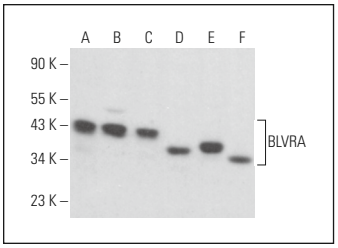
STORAGE

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

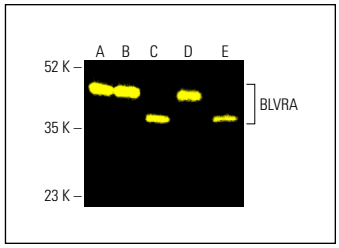
RESEARCH USE

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

DATA



BLVRA (F-1): sc-393385. Western blot analysis of BLVRA expression in Hep G2 (**A**), DU 145 (**B**), A549 (**C**), WEHI-231 (**D**), RAW 264.7 (**E**) and PC-12 (**F**) whole cell lysates.



BLVRA (F-1): sc-393385. Fluorescent western blot analysis of BLVRA expression in DU 145 (**A**), A549 (**B**), WEHI-231 (**C**), Hep G2 (**D**) and KNRK (**E**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_1 BP-CFL 488: sc-533661.

SELECT PRODUCT CITATIONS

1. Adeosun, S.O., et al. 2018. Loss of biliverdin reductase-A promotes lipid accumulation and lipotoxicity in mouse proximal tubule cells. Am. J. Physiol. Renal Physiol. 315: F323-F331.
2. Zhang, Z., et al. 2019. TLR4 counteracts BVRA signaling in human leukocytes via differential regulation of AMPK, mTORC1 and mTORC2. Sci. Rep. 9: 7020.
3. Watanabe, M., et al. 2020. A substrate-trapping strategy to find E3 ubiquitin ligase substrates identifies Parkin and TRIM28 targets. Commun. Biol. 3: 592.
4. Li, Y., et al. 2021. Potential serum biomarkers for postoperative neurocognitive disorders based on proteomic analysis of cognitive-related brain regions. Front. Aging Neurosci. 13: 741263.
5. Huang, Y., et al. 2022. Biliverdin reductase A protects lens epithelial cells against oxidative damage and cellular senescence in age-related cataract. Oxid. Med. Cell. Longev. 2022: 5628946.
6. Huang, Y., et al. 2022. Biliverdin/bilirubin redox pair protects lens epithelial cells against oxidative stress in age-related cataract by regulating NFκB/iNOS and Nrf2/HO-1 pathways. Oxid. Med. Cell. Longev. 2022: 7299182.
7. Lanzillotta, C., et al. 2024. Biliverdin Reductase-A integrates insulin signaling with mitochondrial metabolism through phosphorylation of GSK3β. Redox Biol. 73: 103221.

PROTOCOLS

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