SANTA CRUZ BIOTECHNOLOGY, INC.

β₃-AR (C-5): sc-515763



BACKGROUND

 β_3 -adrenergic receptors (β_3 -ARs) bind cathecholamines (epinephrine, norepinephrine), and primarily regulate lipolysis and thermogenesis in adipose. β_3 -ARs are present in adipose tissues, heart, and in smooth muscle of bladder, colon, small intestine, and stomach. The human corpus cavernosum exhibits basal β_3 -AR-mediated vasorelaxant tone and activity is linked to inhibition of the RhoA/Rho-kinase pathway. β_3 -AR interacts directly with the SH3 domain of Src through proline-rich motifs (PXXP) in the third intracellular loop and the carboxy-terminus.

CHROMOSOMAL LOCATION

Genetic locus: Adrb3 (mouse) mapping to 8 A2.

SOURCE

 $\beta_3\text{-}AR$ (C-5) is a mouse monoclonal antibody raised against amino acids 351-400 mapping within a C-terminal cytoplasmic domain of $\beta_3\text{-}AR$ of mouse origin.

PRODUCT

Each vial contains 200 μg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

 β_3 -AR (C-5) is available conjugated to agarose (sc-515763 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515763 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515763 PE), fluorescein (sc-515763 FITC), Alexa Fluor® 488 (sc-515763 AF488), Alexa Fluor® 546 (sc-515763 AF546), Alexa Fluor® 594 (sc-515763 AF594) or Alexa Fluor® 647 (sc-515763 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515763 AF680) or Alexa Fluor® 790 (sc-515763 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

 β_3 -AR (C-5) is recommended for detection of β_3 -AR of mouse and rat 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 β_3 -AR siRNA (m): sc-39869, β_3 -AR shRNA Plasmid (m): sc-39869-SH and β_3 -AR shRNA (m) Lentiviral Particles: sc-39869-V.

Molecular Weight of β_3 -AR: 44 kDa.

Molecular Weight of glycosylated β_3 -AR: 68 kDa.

Positive Controls: mouse $\beta_3\text{-AR}$ transfected 293T whole cell lysate or mouse adipose tissue extract: sc-395042.

STORAGE

Store at 4° C, **D0 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





β₃-AR expression in mouse adipose tissue extract

 β_3 -AR (C-5): sc-515763. Western blot analysis of β_3 -AR expression in non-transfected (**A**) and mouse β_3 -AR transfected (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- 1. Hong, S., et al. 2018. Phosphorylation of β_3 adrenergic receptor at serine 247 by ERK MAP kinase drives lipolysis in obese adipocytes. Mol. Metab. 12: 25-38.
- 2. Fang, D., et al. 2019. The glycoprotein follistatin-like 1 promotes brown adipose thermogenesis. Metab. Clin. Exp. 98: 16-26.
- Gencarelli, M., et al. 2020. 3-iodothyronamine affects thermogenic substrates' mobilization in brown adipocytes. Biology 9: 95.
- 4. Kitano, T., et al. 2021. Opposing functions of α and β -adrenoceptors in the formation of processes by cultured astrocytes. J. Pharmacol. Sci. 145: 228-240.
- Manigandan, S., et al. 2022. Loss of cytoplasmic FMR1-interacting protein 2 (CYFIP2) induces browning in 3T3-L1 adipocytes via repression of GABA-BR and activation of mTORC1. J. Cell. Biochem. 123: 863-877.
- Dias-Rocha, C.P., et al. 2022. Maternal high-fat diet alters thermogenic markers but not muscle or brown adipose cannabinoid receptors in adult rats. Life Sci. 306: 120831.
- 7. Amato, R., et al. 2022. HIF-1-dependent induction of β 3 adrenoceptor: evidence from the mouse retina. Cells 11: 1271.
- 8. Asif, H., et al. 2023. Title: β 3 adrenergic receptor signaling in the human myometrium. Reprod. Sci. 30: 124-134.
- 9. Cheong, L.Y., et al. 2023. Fibroblastic reticular cells in lymph node potentiate white adipose tissue beiging through neuro-immune crosstalk in male mice. Nat. Commun. 14: 1213.
- 10. D'Ambrosio, et al. 2023. *Tisochrysis lutea* F&M-M36 mitigates risk factors of metabolic syndrome and promotes visceral fat browning through β3-adrenergic receptor/UCP1 signaling. Mar. Drugs 21: 303.

PROTOCOLS

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