SANTA CRUZ BIOTECHNOLOGY, INC.

β_2-AR (R11E1): sc-81577

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Adrenergic receptors (ARs) (the term "adrenergic" reflects the alternative name for epinephrine, adrenaline) include four general types (α_1, α_2, β_1 and β_2) which are found in different target tissues and differ in their affinities and responses to various agonists and antagonists. CDNA clones have been isolated for all of the major AR subtypes and a number of closely related receptors have been identified by this approach. Each of the receptors have been shown to consist of single polypeptide chains which transverse the plasma membrane seven times, presumably forming a bundle of helices within the membrane. These transmembrane regions are hydrophobic and are interconnected by extracellular and intracellular hydrophilic loops. The coupling of ARs to specific intracellular effectors is mediated through diverse heterotrimeric G proteins and is regulated by G protein-coupled receptor kinases (GRKs), cAMP-dependent protein kinase A and protein kinase C directed phosphorylation. β_2-adrenergic receptors bind cathecholamines (epinephrine, norepinephrine) and influence development, behavior, cardiac function, smooth muscle tone and metabolism. β_2-AR signaling complexes can contain C L-type calcium channel $Ca_V1.2$, G protein, adenylyl cyclase, cAMP-dependent kinase and PP2A phosphatase.

CHROMOSOMAL LOCATION

Genetic locus: ADRB2 (human) mapping to 5q32.

SOURCE

β_2-AR (R11E1) is a mouse monoclonal antibody raised against purified, intact β_2-AR 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.

β_2-AR (R11E1) is available conjugated to agarose (sc-81577 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-81577 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81577 PE), fluorescein (sc-81577 FITC), Alexa Fluor® 488 (sc-81577 AF488), Alexa Fluor® 546 (sc-81577 AF546), Alexa Fluor® 594 (sc-81577 AF594) or Alexa Fluor® 647 (sc-81577 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-81577 AF680) or Alexa Fluor® 790 (sc-81577 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

β_2-AR (R11E1) is recommended for detection of β_2-AR of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

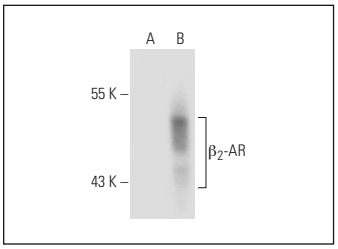
Suitable for use as control antibody for β_2-AR siRNA (h): sc-39866, β_2-AR shRNA Plasmid (h): sc-39866-SH and β_2-AR shRNA (h) Lentiviral Particles: sc-39866-V.

Molecular Weight of β_2-AR: 56-85 kDa.

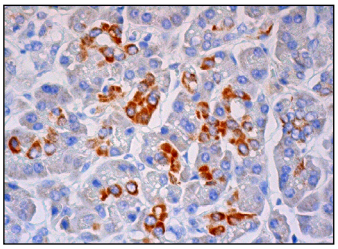
STORAGE

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

DATA



β_2-AR (R11E1): sc-81577. Western blot analysis of β_2-AR expression in non-transfected: sc-117752 (**A**) and human β_2-AR transfected: sc-112395 (**B**) 293T whole cell lysates.



β_2-AR (R11E1): sc-81577. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of subset of glandular cells.

SELECT PRODUCT CITATIONS

1. Huang, C.C., et al. 2009. A surface of the kinase domain critical for the allosteric activation of G protein-coupled receptor kinases. J. Biol. Chem. 284: 17206-17215.
2. Crooke, A., et al. 2013. Melatonin and its analogue 5-MCA-NAT potentiate adrenergic receptor-mediated ocular hypotensive effects in rabbits: significance for combination therapy in glaucoma. J. Pharmacol. Exp. Ther. 346: 138-145.
3. Dever, S.M., et al. 2016. β-adrenergic receptor gene expression in HIV-associated neurocognitive impairment and encephalitis: implications for MOR-1K subcellular localization. J. Neurovirol. 22: 866-870.
4. Shirasaki, H., et al. 2016. Immunohistochemical localization of α and β adrenergic receptors in the human nasal turbinate. Auris Nasus Larynx 43: 309-314.
5. Campbell, A.E., et al. 2017. BET bromodomain inhibitors and agonists of the β_2 adrenergic receptor identified in screens for compounds that inhibit DUX4 expression in FSHD muscle cells. Skelet. Muscle 7: 16.
6. McCulloch, L., et al. 2017. Adrenergic-mediated loss of splenic marginal zone B cells contributes to infection susceptibility after stroke. Nat. Commun. 8: 15051.
7. Decker, A.M., et al. 2017. Sympathetic signaling reactivates quiescent disseminated prostate cancer cells in the bone marrow. Mol. Cancer Res. 15: 1644-1655.
8. Pais, H., et al. 2019. Surfaceome interrogation using an RNA-seq approach highlights leukemia initiating cell biomarkers in an LMO2 T cell transgenic model. Sci. Rep. 9: 5760.

RESEARCH USE

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