SANTA CRUZ BIOTECHNOLOGY, INC.

β_2-AR (h3): 293T Lysate: sc-113753

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 has been shown to consist of single polypeptide chains that 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-ARs 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.

REFERENCES

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3. Dohlman, H.G., et al. 1991. Model systems for the study of seven-transmembrane-segment receptors. Annu. Rev. Biochem. 60: 653-688.
4. Collins, S., et al. 1992. From ligand binding to gene expression: new insights into the regulation of G protein-coupled receptors. Trends Biochem. Sci. 17: 37-39.
5. Collins, S. 1993. Recent perspectives on the molecular structure and regulation of the β_2-adrenoceptor. Life Sci. 52: 2083-2091.
6. Pei, G., et al. 1994. An approach to the study of G protein-coupled receptor kinases: an *in vitro*-purified membrane assay reveals differential receptor specificity and regulation by $G_{\beta\gamma}$ subunits. Proc. Natl. Acad. Sci. USA 91: 3633-3636.
7. Inglese, J., et al. 1994. Functionally active targeting domain of the β-adrenergic receptor kinase: an inhibitor of $G_{\beta\gamma}$-mediated stimulation of type II adenylyl cyclase. Proc. Natl. Acad. Sci. USA 91: 3637-3641.

CHROMOSOMAL LOCATION

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

PRODUCT

β_2-AR (h3): 293T Lysate represents a lysate of human β_2-AR transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

β_2-AR (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive β_2-AR antibodies. Recommended use: 10-20 µl per lane.

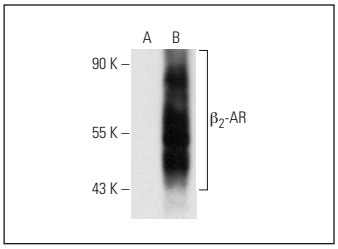
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-tranfected 293T cells.

β_2-AR (E-3): sc-271322 is recommended as a positive control antibody for Western Blot analysis of enhanced human β_2-AR expression in β_2-AR transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



β_2-AR (E-3): sc-271322. Western blot analysis of β_2-AR expression in non-transfected: sc-117752 (**A**) and human β_2-AR transfected: sc-113753 (**B**) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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