

# $\beta_2$ -AR (I3D6): sc-81578

## BACKGROUND

Adrenergic receptors (ARs) (the term "adrenergic" reflects the alternative name for epinephrine, adrenaline) include four general types ( $\alpha_1$ ,  $\alpha_2$ ,  $\beta_1$  and  $\beta_2$ ) 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.  $\beta_2$ -adrenergic receptors bind catecholamines (epinephrine, norepinephrine) and influence development, behavior, cardiac function, smooth muscle tone and metabolism.  $\beta_2$ -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

$\beta_2$ -AR (I3D6) is a mouse monoclonal antibody raised against purified, intact  $\beta_2$ -AR of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

$\beta_2$ -AR (I3D6) is available conjugated to either phycoerythrin (sc-81578 PE) or fluorescein (sc-81578 FITC), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM.

## STORAGE

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

## APPLICATIONS

$\beta_2$ -AR (I3D6) is recommended for detection of  $\beta_2$ -AR of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells).

Suitable for use as control antibody for  $\beta_2$ -AR siRNA (h): sc-39866,  $\beta_2$ -AR shRNA Plasmid (h): sc-39866-SH and  $\beta_2$ -AR shRNA (h) Lentiviral Particles: sc-39866-V.

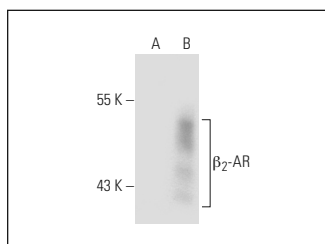
Molecular Weight of  $\beta_2$ -AR: 56-85 kDa.

Positive Controls:  $\beta_2$ -AR (h2): 293T Lysate: sc-112395 or HeLa whole cell lysate: sc-2200.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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



$\beta_2$ -AR (I3D6): sc-81578. Western blot analysis of  $\beta_2$ -AR expression in non-transfected: sc-117752 (A) and human  $\beta_2$ -AR transfected: sc-112395 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS


- Han, S.O., et al. 2012. MARCH2 promotes endocytosis and lysosomal sorting of carvedilol-bound  $\beta_2$ -adrenergic receptors. *J. Cell Biol.* 199: 817-830.
- Battista, A.P.D., et al. 2013.  $\beta_2$ : assessment of  $\beta_2$ -adrenergic receptors on leukocyte subpopulations using imaging cytometry. *Cytokine* 63: 259.
- Eng, J.W., et al. 2015. Housing temperature-induced stress drives therapeutic resistance in murine tumour models through  $\beta_2$ -adrenergic receptor activation. *Nat. Commun.* 6: 6426.
- Oehme, S., et al. 2015. Agonist-induced  $\beta_2$ -adrenoceptor desensitization and downregulation enhance pro-inflammatory cytokine release in human bronchial epithelial cells. *Pulm. Pharmacol. Ther.* 30: 110-120.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



See  **$\beta_2$ -AR (E-3): sc-271322** for  $\beta_2$ -AR antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.