

# $\beta_2$ -AR (E-3): sc-271322

## 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 hetero-trimeric 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 (E-3) is a mouse monoclonal antibody raised against amino acids 338-413 of  $\beta_2$ -AR of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

$\beta_2$ -AR (E-3) is available conjugated to agarose (sc-271322 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271322 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271322 PE), fluorescein (sc-271322 FITC), Alexa Fluor® 488 (sc-271322 AF488), Alexa Fluor® 546 (sc-271322 AF546), Alexa Fluor® 594 (sc-271322 AF594) or Alexa Fluor® 647 (sc-271322 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271322 AF680) or Alexa Fluor® 790 (sc-271322 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

$\beta_2$ -AR (E-3) is recommended for detection of  $\beta_2$ -AR of human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

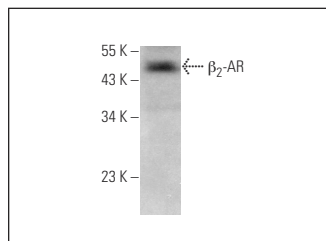
Suitable for use as control antibody for  $\beta_2$ -AR siRNA (h): sc-39866,  $\beta_2$ -AR shRNA Plasmid (h): sc-39866-SH and  $\beta_2$ -AR shRNA (h) Lentiviral Particles: sc-39866-V.

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

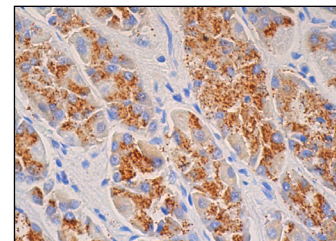
## STORAGE

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

## DATA



$\beta_2$ -AR (E-3): sc-271322. Western blot analysis of  $\beta_2$ -AR expression in HUV-EC-C whole cell lysate.



$\beta_2$ -AR (E-3) HRP: sc-271322 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing cytoplasmic staining of glandular cells. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214.

## SELECT PRODUCT CITATIONS

- Mendes, L.V.P., et al. 2017. Long-term effect of a chronic low-protein multideficient diet on the heart: hypertension and heart failure in chronically malnourished young adult rats. *Int. J. Cardiol.* 238: 43-56.
- Pagano, F., et al. 2018.  $\beta_2$ -adrenergic signaling affects the phenotype of human cardiac progenitor cells through EMT modulation. *Pharmacol. Res.* 127: 41-48.
- Kim, T.H., et al. 2019. Stress hormone signaling through  $\beta$ -adrenergic receptors regulates macrophage mechanotype and function. *FASEB J.* 33: 3997-4006.
- Chen, Y.F., et al. 2022. Basolateral amygdala activation enhances object recognition memory by inhibiting anterior insular cortex activity. *Proc. Natl. Acad. Sci. USA* 119: e2203680119.
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- Kawaguchi, K., et al. 2022. Ezrin knockdown reduces procaterol-stimulated ciliary beating without morphological changes in mouse airway cilia. *J. Cell Sci.* 135: jcs259201.
- Iqbal, Z., et al. 2023. Adrenergic signalling to astrocytes in anterior cingulate cortex contributes to pain-related aversive memory in rats. *Commun. Biol.* 6: 10.
- Chodari, L., et al. 2023. Exercise may alleviate age-related spatial memory impairment by rescuing  $\beta$ -adrenergic receptor dysregulation via both G protein-dependent and  $\beta$ -Arrestin-dependent mechanisms in rat hippocampus. *Brain Res.* 1804: 148250.

## RESEARCH USE

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

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