

# p- $\beta_2$ -AR (Ser 345/Ser 346): sc-16718

## BACKGROUND

$\beta_2$  adrenergic receptors ( $\beta_2$ -ARs) bind catecholamines (epinephrine and norepinephrine) and influence development, behavior, cardiac function, smooth muscle tone, and metabolism.  $\beta_2$ -AR signaling complexes can contain class C L-type calcium channel CaV1.2, G protein, adenylyl cyclase, cAMP-dependent kinase and PP2A phosphatase.  $\beta_2$ -ARs are present in adipose, blood, lung, brain, heart, nose, pancreas, skeletal muscle, skin and vessels. Phosphorylation of Ser 345/346 and Ser 355/356 by PKA and GRK, respectively, promotes desensitization of the  $\beta_2$ -AR.

## REFERENCES

- Seibold, A., et al. 2000. Localization of the sites mediating desensitization of the  $\beta_2$ -adrenergic receptor by the GRK pathway. *Mol. Pharmacol.* 58: 1162-1173.
- Moffett, S., et al. 2001. The palmitoylation state of the  $\beta_2$ -adrenergic receptor regulates the synergistic action of cyclic AMP-dependent protein kinase and  $\beta$ -adrenergic receptor kinase involved in its phosphorylation and desensitization. *J. Neurochem.* 76: 269-279.
- Davare, M.A., et al. 2001. A  $\beta_2$ -adrenergic receptor signaling complex assembled with the Ca<sup>2+</sup> channel CaV1.2. *Science* 293: 98-101.
- Friedman, J., et al. 2002.  $\beta_2$ -adrenergic receptor lacking the cyclic AMP-dependent protein kinase consensus sites fully activates extracellular signal-regulated kinase 1/2 in human embryonic kidney 293 cells: lack of evidence for G<sub>s</sub>/G<sub>i</sub> switching. *Mol. Pharmacol.* 62: 1094-1102.
- LocusLink Report. LocusID: 153. <http://www.ncbi.nlm.nih.gov/LocusLink/>

## CHROMOSOMAL LOCATION

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

## SOURCE

p- $\beta_2$ -AR (Ser 345/Ser 346) is available as either goat (sc-16718) or rabbit (sc-16718-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Ser 345 and Ser 346 of  $\beta_2$ -AR of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16718 P (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## PROTOCOLS

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

## APPLICATIONS

p- $\beta_2$ -AR (Ser 345/Ser 346) is recommended for detection of Ser 345 and Ser 346 dually phosphorylated  $\beta_2$ -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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

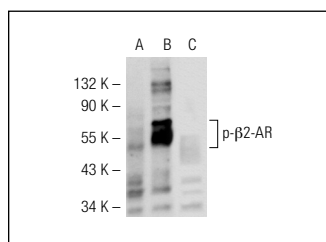
p- $\beta_2$ -AR (Ser 345/Ser 346) is also recommended for detection of correspondingly phosphorylated Ser on  $\beta_2$ -AR in additional species, including equine, canine and bovine.

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 p- $\beta_2$ -AR: 68 kDa.

Positive Controls: HeLa + PMA cell lysate: sc-2258.

## DATA



p- $\beta_2$ -AR (Ser 345/Ser 346)-R: sc-16718-R. Western blot analysis of  $\beta_2$ -AR phosphorylation in untreated (A), PMA treated (B) and PMA and lambda protein phosphatase (sc-200312A) treated (C) HeLa whole cell lysates.

## SELECT PRODUCT CITATIONS

- Wang, J. and Liu, X.J. 2004. Progesterone inhibits protein kinase A (PKA) in *Xenopus* oocytes: demonstration of endogenous PKA activities using an expressed substrate. *J. Cell Sci.* 117: 5107-5116.
- Lynch, M.J., et al. 2005. RNA silencing identifies PDE4D5 as the functionally relevant cAMP phosphodiesterase interacting with  $\beta$ -Arrestin to control the protein kinase A/AKAP79-mediated switching of the  $\beta_2$ -adrenergic receptor to activation of ERK in HEK293B2 cells. *J. Biol. Chem.* 280: 33178-33189.
- Li, X., et al. 2006. Phosphodiesterase-4 influences the PKA phosphorylation status and membrane translocation of G-protein receptor kinase 2 (GRK2) in HEK-293 $\beta_2$  cells and cardiac myocytes. *Biochem. J.* 394: 427-435.

## RESEARCH USE

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