SANTA CRUZ BIOTECHNOLOGY, INC.

β-Arrestin-1/2 (21-B1): sc-53781

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The members of the G protein-coupled receptor family are distinguished by their slow transmitting response to ligand binding. These seven transmembrane proteins include the adrenergic, serotonin and dopamine receptors. The effect of the signaling molecule can be excitatory or inhibitory depending on the type of receptor to which it binds. Members of the β-Arrestin family regulate receptor binding to G proteins. β-Arrestins have been found to be located at postsynaptic sites, where they are thought to act in concert with βARK (βARK1, also designated GRK 2, or βARK2, also designated GRK 3) to regulate G protein-coupled neurotransmitter receptors. Expression of β-Arrestin-1 and β-Arrestin-2 is seen predominantly in spleen and neuronal tissues. It has been shown that β-Arrestin-1 expression is modulated by intracellular cAMP, which may be a novel mechanism for the regulation of receptor-mediated responses.

REFERENCES

1. Hausdorff, W.P., et al. 1990. Two kinases mediate agonist-dependent phosphorylation and desensitization of the β_2-adrenergic receptor. Symp. Soc. Exp. Biol. 44: 225-240.
2. Cotecchia, S., et al. 1990. Multiple second messenger pathways of α-adrenergic receptor subtypes expressed in eukaryotic cells. J. Biol. Chem. 265: 63-69.
3. Attramadal, H., et al. 1992. β-Arrestin-2, a novel member of the Arrestin/β-Arrestin gene family. J. Biol. Chem. 267: 17882-17890.
4. Dolph, P.J., et al. 1993. Arrestin function in inactivation of G protein-coupled receptor rhodopsin *in vivo*. Science 260: 1910-1916.
5. Parruti, G., et al. 1993. Molecular analysis of human β-Arrestin-1: cloning, tissue distribution, and regulation of expression. Identification of two isoforms generated by alternative splicing. J. Biol. Chem. 268: 9753-9761.
6. Barak, L.S., et al. 1995. The conserved seven-transmembrane sequence NP(X)2,3Y of the G protein-coupled receptor superfamily regulates multiple properties of the β_2-adrenergic receptor. Biochemistry 34: 15407-15414.

CHROMOSOMAL LOCATION

Genetic locus: ARRB1 (human) mapping to 11q13.4, ARRB2 (human) mapping to 17p13.2; Arrb1 (mouse) mapping to 7 E2, Arrb2 (mouse) mapping to 11 B3.

SOURCE

β-Arrestin-1/2 (21-B1) is a mouse monoclonal antibody raised against β-Arrestin-1.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

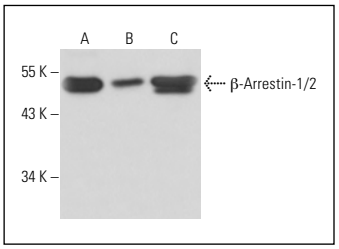
APPLICATIONS

β-Arrestin-1/2 (21-B1) is recommended for detection of β-Arrestin 1 and β-Arrestin 2 of mouse, rat and 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)] and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

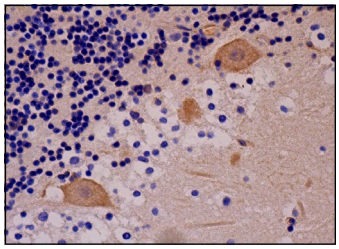
Molecular Weight of β-Arrestin-1/2: 55 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, PC-12 cell lysate: sc-2250 or SK-N-MC cell lysate: sc-2237.

DATA



β-Arrestin-1/2 (21-B1): sc-53781. Western blot analysis of β-Arrestin-1/2 expression in PC-12 (**A**), SK-N-MC (**B**) and RAW 264.7 (**C**) whole cell lysates.



β-Arrestin-1/2 (21-B1): sc-53781. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of Purkinje cells.

SELECT PRODUCT CITATIONS

1. Malik, R. and Marchese, A. 2010. Arrestin-2 interacts with the endosomal sorting complex required for transport machinery to modulate endosomal sorting of CXCR4. Mol. Biol. Cell 21: 2529-2541.
2. Pastori, C., et al. 2014. Induction of HIV-blocking anti-CCR5 IgA in Peyers's patches without histopathological alterations. J. Virol. 88: 3623-3635.
3. Venuti, A., et al. 2015. ERK1-based pathway as a new selective mechanism to modulate CCR5 with natural antibodies. J. Immunol. 195: 3045-3057.
4. Hermosilla, T., et al. 2017. Prolonged AT_1R activation induces $Ca_V1.2$ channel internalization in rat cardiomyocytes. Sci. Rep. 7: 10131.
5. Senatorov, I.S., et al. 2020. Carboxy-terminal phosphoregulation of the long splice isoform of free-fatty acid receptor-4 mediates β-Arrestin recruitment and signaling to ERK1/2. Mol. Pharmacol. 97: 304-313.

RESEARCH USE

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

CONJUGATES

See β-**Arrestin-2 (B-4): sc-365445** for β-Arrestin-2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.