

Product Data Sheet

Product Name: tBPC
Cat. No.: GC50440

Chemical Properties

Cas. No. 1942-71-8

Chemical Name 2-[4-(1,1-Dimethylethyl)phenoxy]cyclohexanol

SMILES CC(C)(C1=CC=C(C=C1)OC2CCCCC2O)C

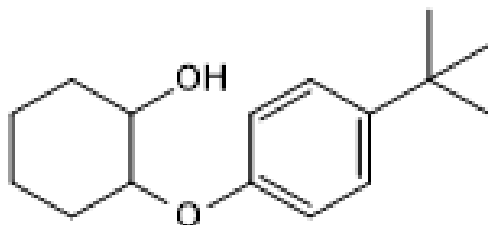
Formula C₁₆H₂₄O₂ M.Wt 248.36

Solubility 24.84mg/ml in DMSO, 24.84mg/ml in Ethanol Storage Store at 4°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

Cell lines COS7 cells stably transfected with human Y4R-eYFP and chimeric $\Delta 6G\alpha q4$ -myr G-protein; HEK293 cells transiently expressing Y4R-Rluc8 and venus-arrestin3 fusion proteins; Mouse descending colon mucosa endogenously expressing Y4R.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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Preparation Method For Ca^{2+} flux assays, transfected COS7 cells were seeded in plates and loaded with Fluo2-AM dye. For arrestin3 recruitment BRET assays, transfected HEK293 cells were seeded in plates and incubated with coelenterazine H. Cells tBPC (5.1 μM -30 μM) for 30 minutes.

Reaction Conditions 5.1-30 μM ; incubation for 30 min.

Applications tBPC potentiated Y4R activation by its native ligand Pancreatic Polypeptide (PP) and other peptide ligands (NPY, PYY) in both G-protein-mediated Ca^{2+} signaling and arrestin3 recruitment pathways. tBPC acted as a positive allosteric modulator (PAM) and displayed weak agonistic activity in overexpressing systems.

References:

[1] Schubert M, Stichel J, Du Y, et al. Identification and Characterization of the First Selective Y4 Receptor Positive Allosteric Modulator. J Med Chem. 2017 Sep 14;60(17):7605-7612.

Background

tBPC is a selective positive allosteric modulator of the Y4 receptor. tBPC enhances the activation of the Y4 receptor in G protein signaling and arrestin3 recruitment, thereby potentiating the Y4R responses to pancreatic polypeptide, neuropeptide Y, and peptide YY, while maintaining specificity by selectively modulating the Y4 receptor without affecting the Y1, Y2, or Y5 receptors^[1].

In vitro, treatment of COS7 cells and HEK293 cells with tBPC (5.1 μM -30 μM) for 30 minutes enhances the activation effect of Polypeptide and other peptides (NPY, PYY) on Y4R, as well as the rate of arrestin3 recruitment^[1].

References:

[1] Schubert M, Stichel J, Du Y, et al. Identification and Characterization of the First Selective Y4

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