

Human 5-hydroxytryptamine (serotonin) receptor 1A (HTR1A) ACTOne™ Stable Cell Line

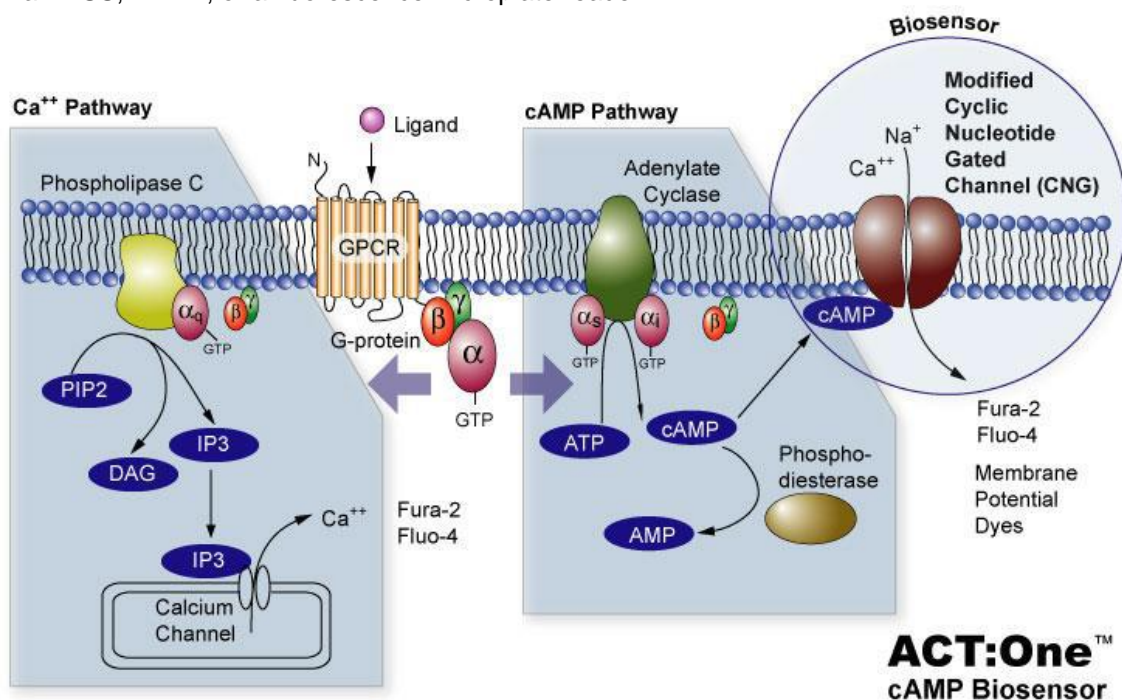
CATALOG NUMBER: CL-11-HTR1A

Introduction

HTR1A, expressed in the pancreas and gastrointestinal tract, encodes a member of the rhodopsin subfamily of G-protein-coupled receptors. The encoded protein is activated by lipid amides including lysophosphatidylcholine and oleoylethanolamide and may be involved in glucose homeostasis. This protein is a potential drug target in the treatment of type 2 diabetes.

Description

Human HTR1A ACTOne™ is a HEK293-CNG cell line that expresses recombinant human HTR1A. HEK293-CNG cells express a modified CNG (Cyclic Nucleotide Gated) channel that opens in response to elevated intracellular cAMP levels and consequently result in ion flux and cell membrane depolarization which can be easily measured with fluorescent Membrane Potential Dye (Cat# CA-M165). The assay allows both end-point and kinetic measurement of intracellular cAMP changes with a FDSS, FLIPR, or a fluorescence microplate reader.



Parental Cells

HEK-293 CNG cells (originally developed by BD Biosciences by introducing CNG in HEK-293 cells) (Cat# CL-03-PC20)

Gene/Enzyme Introduced

HTR1A (NCBI protein database XP_003692)

Applications

- cAMP dependent cell-based assay for Gi-coupled human G-protein coupled receptor (HTR1A)
- cell-based high-throughput screening of human HTR1A receptor agonists/antagonists



Mycoplasma Contamination Test

This cell line has been tested negative for *Mycoplasma sp.*

Growth Properties

Adherent

Cell Culture Medium

- Growth medium: 90% DMEM, 10% FBS, supplemented with 250 µg/ml G418, 1 µg/ml Puromycin
- Freezing medium: 10% DMSO, 90% FBS

DATA EXAMPLE

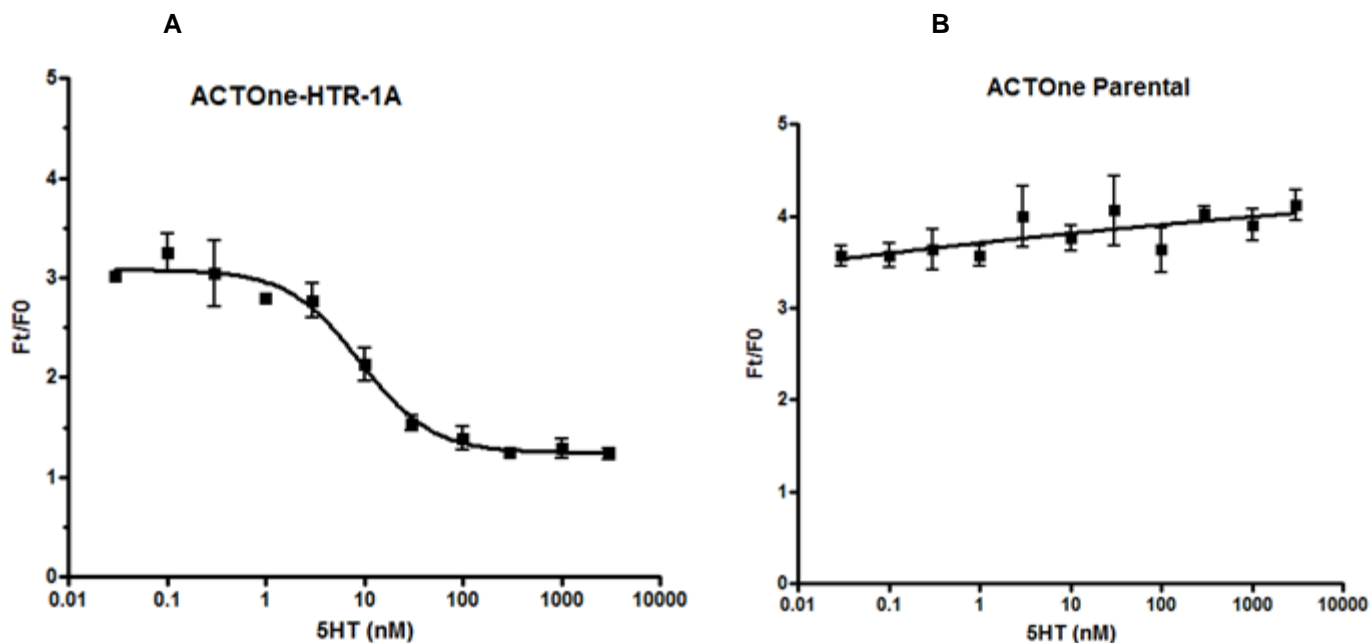


Figure 1. Response of ACTOne HTR1A cell line & parental cell line to 5HT.

ACTOne HTR1A receptor cells and parental cells (Cat# CL-03-PC20) were plated overnight in 20 µl culture medium on a BD Biocoat 384 well plate. The next day, cells were dye-loaded with 20 µl/well of 1X Dye-loading solution (Membrane Potential Assay Kit CA-M165). After 2 hours of incubation at room temperature, two readings were obtained prior to and 40 min after the addition of 5HT. Ratios of the two readings (F/F0) are plotted in the figure.

- Dose response curve of 5HT in ACTOne HTR1A cell line. EC50 = 9.1 nM in the presence of PDE inhibitor Ro20-1724 and β -adrenoceptor agonist isoproterenol.**
- Parental cells do not respond to 5HT.**

Notice to Purchaser

This cell line is sold with a use license. It may not be transferred to third parties, resold, modified for resale without written approval of eEnzyme LLC. Refer to the license agreements for details on the usage restrictions.

