

Dopamine Receptor D5 (DRD5) ACTOne™ Stable Cell Line

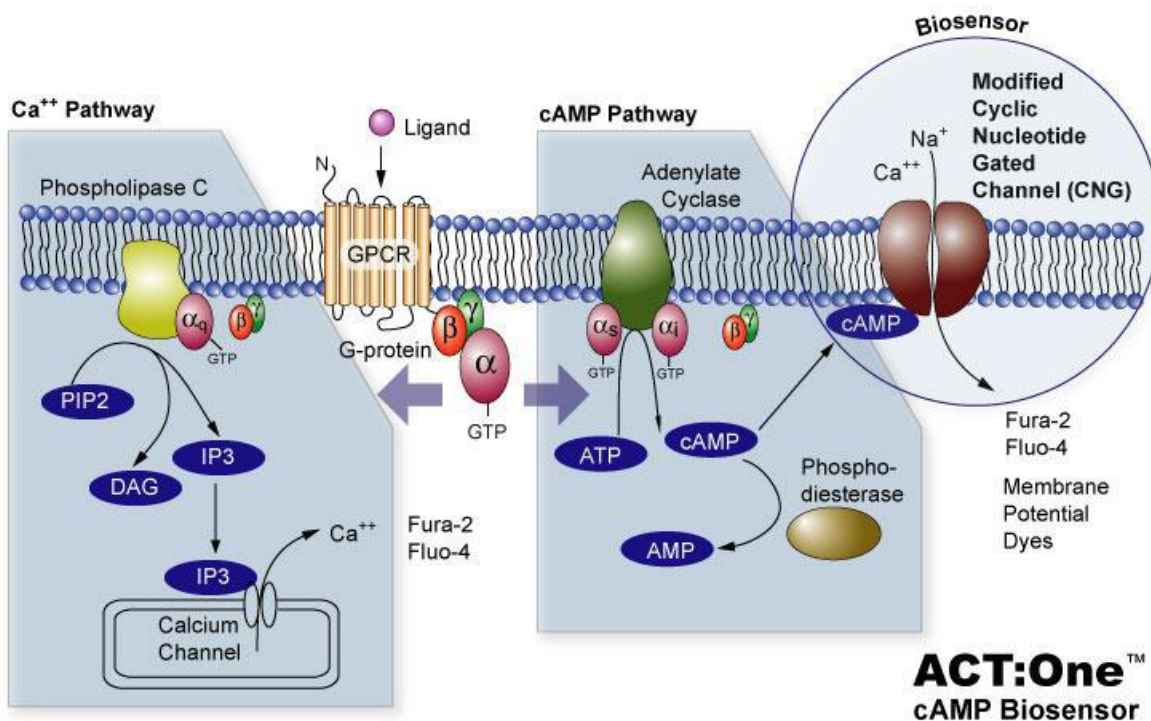
CATALOG NUMBER: CL-01-DRD5

Introduction

The D5 subtype of dopamine receptor (DRD5) is a G-protein coupled receptor which stimulates adenylyl cyclase. This receptor is expressed in neurons in the limbic regions of the brain. It has a 10-fold higher affinity for dopamine than the D1 subtype.

Description

Human DRD5 ACTOne™ is a HEK-293 CNG cell line that expresses recombinant human DRD5. HEK-293 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 (often detectable by calcium-responsive dye, Cat# CA-C155) 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

DRD5 (Genbank Accession No. NP_000789.1)

Applications

- cAMP dependent human DRD5 receptor cell based assay
- cell based high-throughput screening of human DRD5 receptor agonists/antagonists

Functional Test

- this cell line has been tested positive for DRD5 receptor specific response
- surviving rate: More than 2.5 million/vial on the second day after thawing
- the receptor specific activity is stable for 10 weeks continuous passage

Mycoplasma Contamination Test

This lot of cells has been tested and found to be free of mycoplasma contamination.

Content

- Stable DRD5 receptor cells: 1 mL (1 x 10⁶ cells/mL in 70% DMEM, 20% FBS, 10% DMSO)

Growth Properties

Adherent

Cell Culture Medium

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

Storage

Remove the frozen cells from the dry ice packaging and immediately place the cells at a temperature below -130°C, preferably in liquid nitrogen vapor, until ready for use.

Data Example

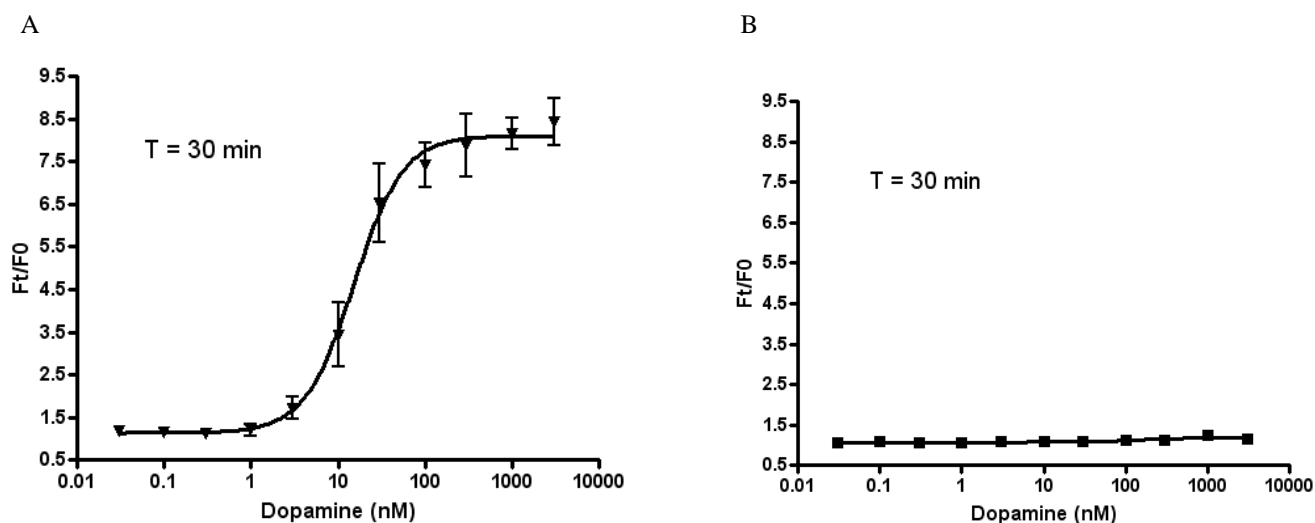


Figure 1. Response of ACTOne™ DRD5 cell line & parental cell line to dopamine

ACTOne™ DRD5 receptor cells and parental cells (Cat# CL-03-PC20) were plated overnight in 20 µl culture medium on a 384 well Biocoat plate. The next day, cells were dye-loaded with 20 µl/well of 1x Dye-loading solution (membrane potential dye kit, Cat# CA-M165). After 2 hours of incubation at room temperature, two readings were obtained prior to and 30 min after the addition of [Nle4, D-Phe7]α-MSH. Ratios of the two readings (F/F₀) are plotted in the figure.

- Dose response curve of dopamine in ACTOne™ DRD5 cell line. EC₅₀ = 15.12 nM in the presence of PDE inhibitor Ro 20-1724.**
- Parental cells do not respond to dopamine.**

Notice to Purchaser

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