NOMAD CELL LINES

P70520-G

Nomad Biosensors™ comprise a family of genetically encoded fluorescent sensors designed to monitor the signaling of G protein-coupled receptors (GPCRs) in cell-based assays.

Nomad Biosensors™ are engineered to measure the intracellular dynamics of second messengers such as calcium (Ca^{2+} Nomad), cAMP (cAMP Nomad), or diacylglycerol (DAG Nomad) upon GPCR activation. Additionally, β-arrestin signaling can also be studied using these biosensors. Nomad Biosensors™ can be combined in the same cell line for multiplex assays.

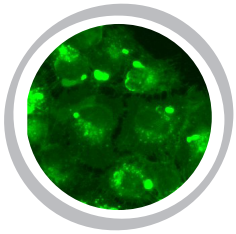
Prior to GPCR activation, the biosensors are localized in the plasma membrane. Upon ligand binding, the sensors undergo a conformational change that leads to an increase in fluorescence intensity and their relocalization within the vesicular trafficking pathways of the cells.

Innoprot

cAMPNOMAD DRD4 Cell Line

DOPAMINE RECEPTOR D4

cAMP Nomad Biosensor



Product Name: cAMPNomad-DRD4 cell line
Reference: P70520-G
Recp. Official Full Name: Dopamine receptor D4
DNA Accession Number: NM_000797
Host Cell: U2OS
Resistance: Geneticin + Puromycin
Quantity: > $3x10^6$ cells/vial
Storage: Liquid Nitrogen

About cAMPNomad-DRD4

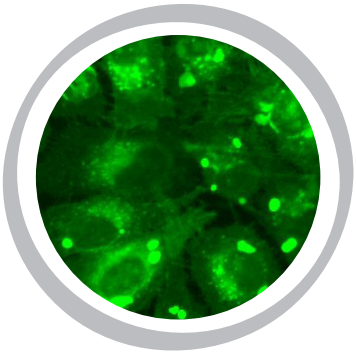
Innoprot´s Nomad cell lines have been developed to assay compounds and analyze their ability to modulate GPCR signaling.

Nomad cell lines stably express both a biosensor and an untagged GPCR. The receptor's activity can be easily quantified in living cells using image analysis in a High Content Screening (HCS) assay or by measuring fluorescence intensity in a High Throughput Screening (HTS) assay.

Each vial of cAMPNomad-DRD4 contains U2OS cells stably expressing the green cAMPNomad biosensor and the Dopamine receptor D4. When an agonist binds to the receptor, a G protein is activated, triggering a cellular response mediated by cAMP. This cell line has been validated by measuring the fluorescence intensity emission of the green cAMPNomad biosensor within the cell.

Control

Dopamine



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cAMP ASSAY

The green cAMPNomad-DRD$_4$ cell line was plated in a 96-well plate and incubated for a minimum of 4 hours and up to 24 hours at 37°C with 5% CO_2 to allow the cells to attach to the plate surface. Subsequently, the cells were treated with Dopamine diluted in a serum-reduced medium for 20-24 hours.

The increase in the fluorescence intensity of the green cAMPNomad biosensor was detected and analyzed using a conventional microplate reader. Images were captured with an image analysis system.

cAMPNomad-DRD$_4$

Ec_{50} Dopamine: $4.64x10^{-6}$ M | Z´: 0.88

Agonism Assay

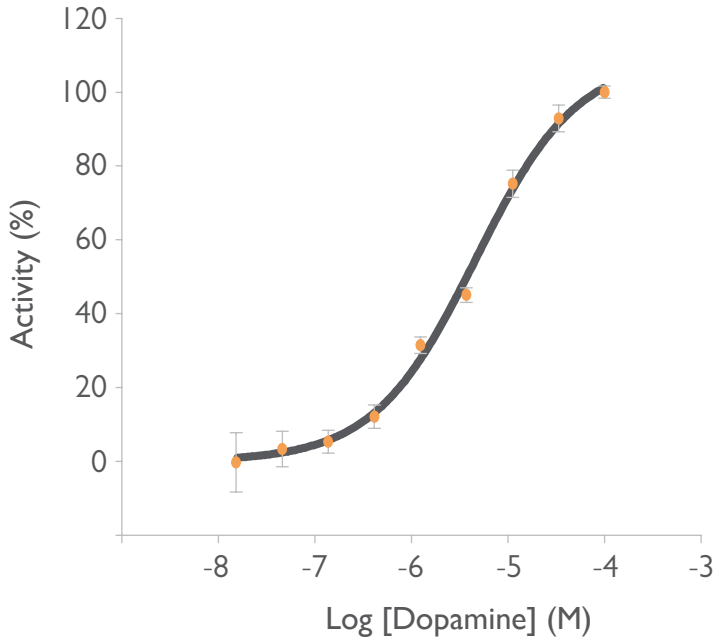

Figure 1. Agonism dose-response curve. Cells were stimulated overnight with increasing dilutions of Dopamine. Data were normalized as percentages of the green cAMPNomad biosensor activity relative to the positive control (100 µM Dopamine), after subtracting the value of the vehicle control.

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