

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 (Ca²⁺ 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.

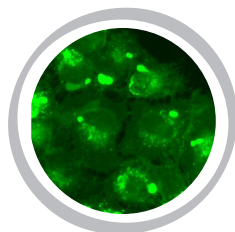


Innoprot

cAMP **NOMAD 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: > 3×10⁶ 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.

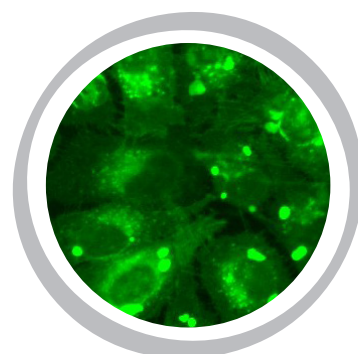
Nomad cell lines stably express both a biosensor and an untagged GPCR. The receptor's activity can be easily quantified in living cells using image analysis in a High Content Screening (HCS) assay or by measuring fluorescence intensity in a High Throughput Screening (HTS) assay.

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



cAMP ASSAY

The green $cAMP^{Nomad-DRD_4}$ 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% CO₂ 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 $cAMP^{Nomad}$ biosensor was detected and analyzed using a conventional microplate reader. Images were captured with an image analysis system.

$cAMP^{Nomad-DRD_4}$

EC_{50} Dopamine: 4.64×10^{-6} M

Z' : 0.88

Agonism Assay

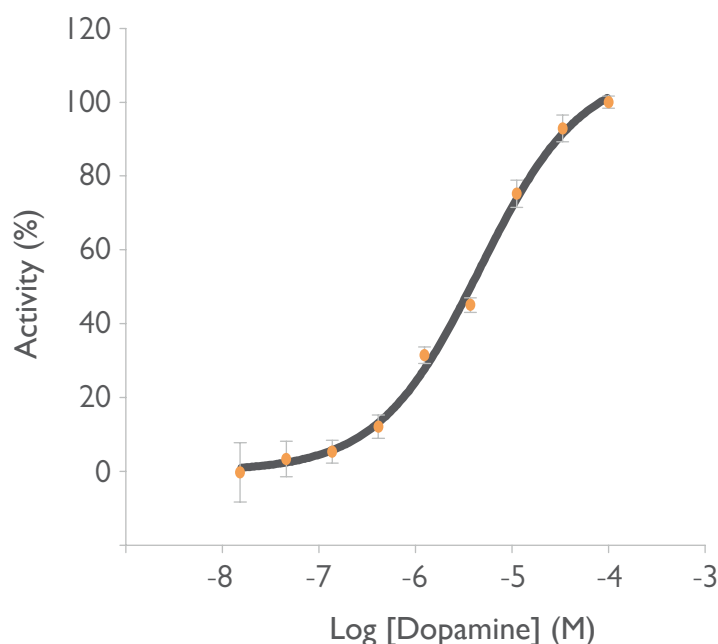


Figure 1. Agonism dose-response curve. Cells were stimulated overnight with increasing dilutions of Dopamine. Data were normalized as percentages of the green $cAMP^{Nomad}$ biosensor activity relative to the positive control (100 μ M Dopamine), after subtracting the value of the vehicle control.