

P70508-01R

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.



cAMPNOMAD DRD1

cAMP Assay

Product Name: cAMPNomad-DRD1 cell line

Reference: P70508-01R

Gene Name: Dopamine receptor D1 (DRD1)

cDNA Accession Number: NM000794

Host Cell Line: HEK293

Selection Markers: Geneticin (G418) + Hygromycin

Cell Quantity: > 3x10⁶ cells/vial

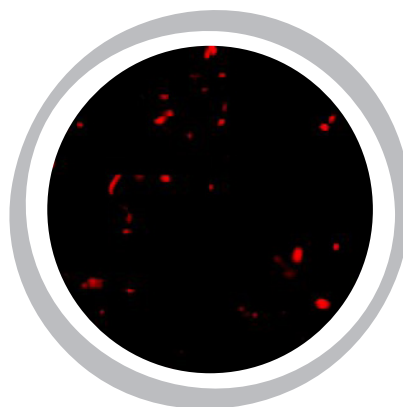
Storage Conditions: Liquid Nitrogen

About cAMPNomad-DRD1

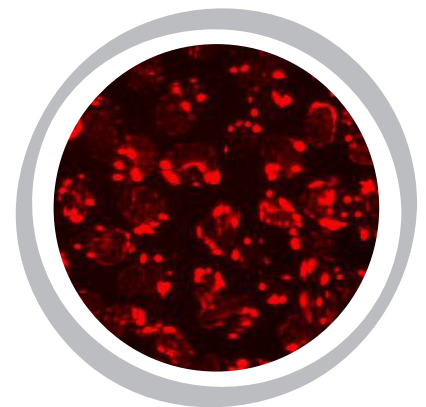
Nomad cell lines are a reliable system for studying G protein-coupled receptor (GPCR) signaling in living cells.

Optimized for the integration into High Content Screening (HCS) and High Throughput Screening (HTS) workflows, cAMPNomad-DRD1 cell line stably express red cAMPNomad Biosensor along with the Dopamine receptor D1 (DRD1).

Control



Dopamine



cAMP Agonism Assay

The $cAMP$ Nomad-DRD1 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.

Agonism Assay: Cells were incubated with Dopamine diluted in a serum-reduced medium for 20–24 hours.

The increase in the fluorescence intensity of the red $cAMP$ Nomad biosensor (% Activity) was detected and analyzed using a microplate reader.

EC₅₀ Dopamine : 1.27×10^{-7} M
Z': 0.79+/- 0.01

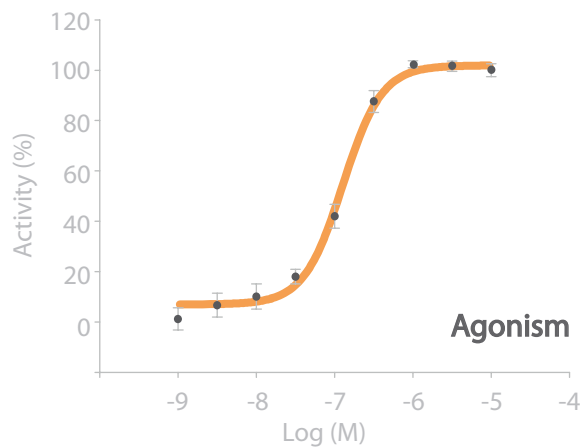


Figure 1. Dose-response curve for DRD1 ligand.
Concentration response curve for Dopamine in the agonism assay.
The % Activity corresponds to the fluorescence intensity emitted by the red $cAMP$ Nomad biosensor normalized against the controls.