innoprot
cell based solutions

NOMAD CELL LINES

P70410-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.

Ca^{2+}NOMAD M1

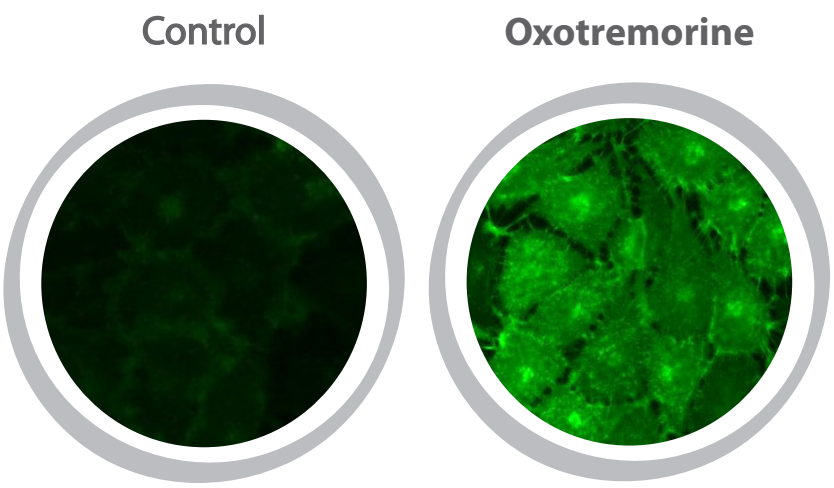
Calcium Assay

Product Name: Ca^{2+}Nomad-M1 Cell Line
Reference: P70410-G
Gene Name: Cholinergic receptor muscarinic 1 receptor (M1)
cDNA Accession Number: BC007740
Host Cell Line: U2OS
Selection Markers: Geneticin (G418) + Puromycin
Cell Quantity: > $3x10^6$ cells/vial
Storage Conditions: Liquid Nitrogen

About Ca^{2+}Nomad-M1

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, Ca^{2+}Nomad-M1 Cell Line stably express green Ca^{2+}Nomad Biosensor along with the Cholinergic receptor muscarinic 1 receptor (M1).



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Calcium Agonism Assay

The Ca^{2+}Nomad-M1 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.

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

The increase in the fluorescence intensity of the green Ca^{2+}Nomad biosensor (% Activity) was detected and analyzed using a microplate reader.

EC_{50} Oxotremorine: $9.17x10^{-7}$ M

Z´: 0.81+/- 0.01

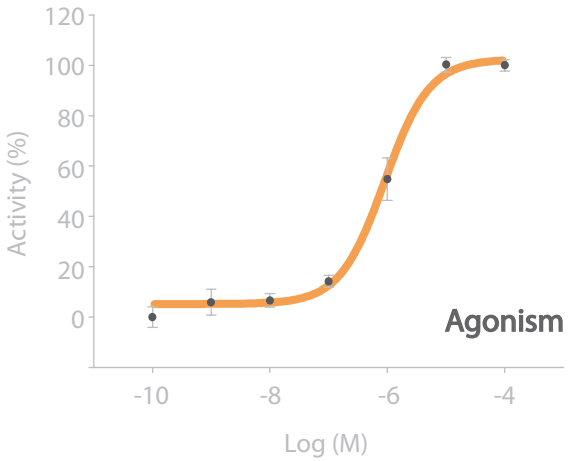

Figure 1. Dose-response curve for M1 ligand.
Concentration response curve for Oxotremorine in the agonism assay.
The % Activity corresponds to the fluorescence intensity emitted by the green Ca^{2+}Nomad biosensor normalized against the controls.

日本総代理店
オーラス・バイオサイエンス株式会社
〒271-0063 千葉県松戸市北松戸2-21-18
Tel.: 047-308-2204 | Fax: 047-308-2104 | ww.eolas-bio.co.jp

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