

P70539

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 ADR β 1

cAMP Assay

Product Name: cAMPNomad-ADR β 1 Receptor Cell Line

Reference: P70539

Gene Name: β 1-adrenoceptor (ADR β 1)

cDNA Accession Number: NM_000684.3

Host Cell Line: U2OS

Selection Markers: Geneticin (G418) + Hygromycin

Cell Quantity: > 3x10⁶ cells/vial

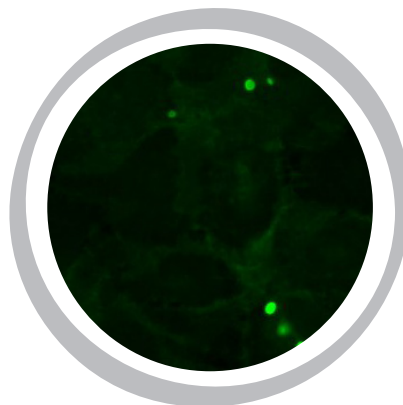
Storage Conditions: Liquid Nitrogen

About cAMPNomad-ADR β 1

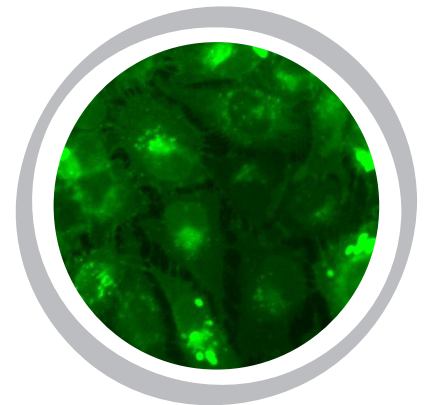
Nomad cell lines are a reliable system for studying G protein-coupled receptor (GPCR) signaling in living cells.

Optimized for the integration into High Content Screening (HCS) and High Throughput Screening (HTS) workflows, cAMPNomad-ADRB1 Receptor Cell Line stably express green cAMPNomad Biosensor along with the β 1-adrenoceptor (ADR β 1).

Control



Clenbuterol



cAMP Agonism & Antagonism Assays

The cAMPNomad-ADRB1 Receptor 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 Clenbuterol diluted in a serum-reduced medium for 20–24 hours.

Antagonism Assay: Cells were incubated with Carazolol diluted in 100 nM Clenbuterol in serum-reduced medium for 20–24 hours.

The increase (Agonism Assay) or decrease (Antagonism Assay) in the fluorescence intensity of the green cAMPNomad biosensor (% Activity) was detected and analyzed using a microplate reader.

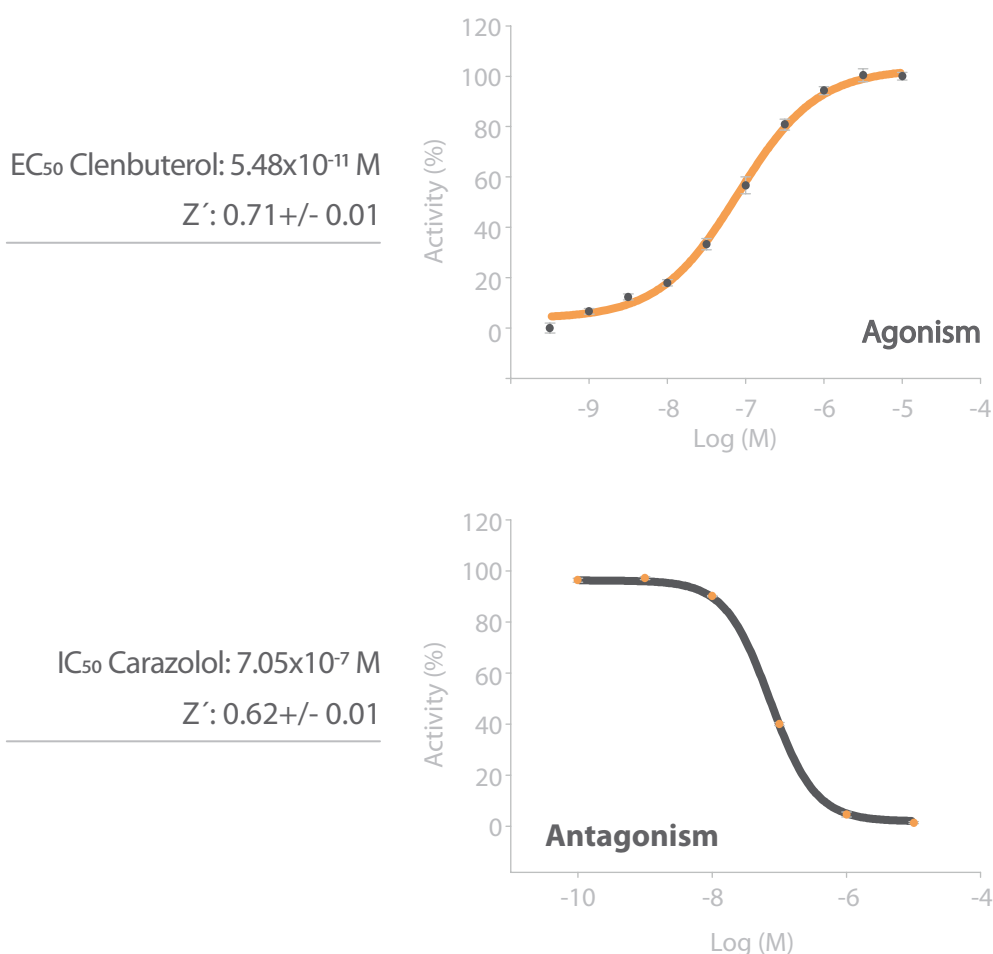


Figure 1. Dose-response curves for ADRB1 ligands.

Top: concentration response curve for Clenbuterol in the agonism assay.

Bottom: concentration response curve for Carazolol for the antagonism assay.

The % Activity corresponds to the fluorescence intensity emitted by the green cAMPNomad biosensor normalized against the controls.