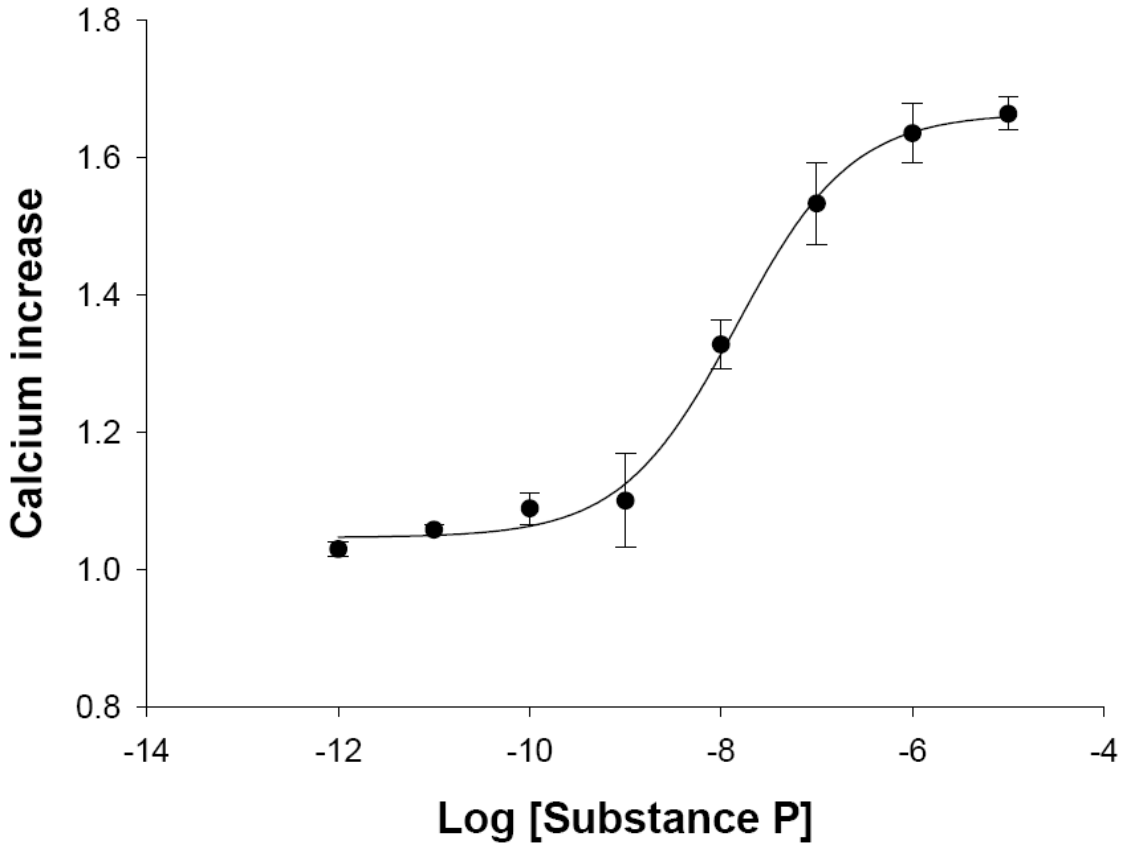
REF: P30129

HiTSeeker CELL LINES (LABEL-FREE GPCRS)

- TACHYKININ 1 / NEUROKININ 1 RECEPTOR CELL LINE -



Product name: TACR1 (NKR1 or SPR) / HEK293 cell line

Ec_{50} Substance P: 1.4 x 10^{-8} M

Z´: 0.84+/- 0.01

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HiTSeeker CELL LINES (LABEL-FREE GPCRS)

TACHYKININ RECEPTOR 1 CELL LINE

Product Name:	TACR1(NK1) /HEK293
Official Full Name:	Tachykinin receptor 1
DNA Accesion Number:	GenBank: AY462098
Host Cell:	HEK293
Format:	Cryopreserved vials
Resistance:	Puromycin
Size:	*P30129*: 2 vials of 3 x 10^6 proliferative cells *P30129-DA*: 1 vial of 2.5x10^6 division-arrested cells
Storage:	Liquid Nitrogen

Assay Briefly description

Each vial of HiTSeeker TACR1 contains HEK293 cells stably expressing human Tachykinin receptor 1 (TACR1) with no tag.

HiTSeeker TACR1 cell line has been designed to assay compounds or analyze their capability to modulate Tachykinin receptor 1. When the agonist binds to TACR1 a G protein is activated, which in turn, triggers a cellular response mediated by second messengers (Calcium).

This cell line has been validated measuring calcium increase in the cytosol. The high reproducibility of this assay allows monitoring TACR1 activation process in High Throughput Screening.

About TACR1

Tachykinin receptor 1 (TACR1) also known as neurokinin 1 receptor (NK1R) or substance P receptor (SPR) belongs to a family of proteins characterized by the interaction with G proteins.

TACR1 is localized both in the central nervous system (CNS) and peripheral tissues.
Tachykinin receptor 1 presents great affinity for Substance P agonist.

This receptor is an interesting drug target in the studies about analgesics and anti-depressants.

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Assay Characterization

Our expression plasmid contains the coding sequence of human TACR1 receptor protein. Our plasmid was transfected in HEK293 cells. Resistant clones were obtained by limit dilution and receptor gene expression was tested by RT-PCR using GAPDH as internal control (Fig.1).

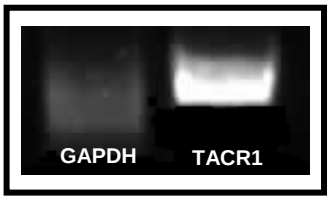

Fig.1. GAPDH housekeeping gene and TACR1 **RT-PCR.**

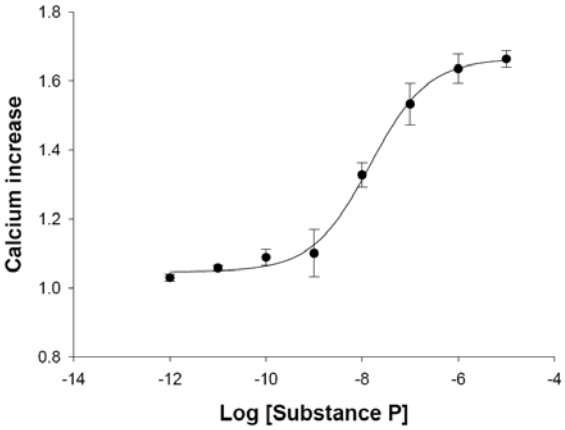

Fig.2. Substance P dose response in calcium assay. Cells were treated with **Substance P** concentrations ranging from 0 to 10 µM by quadruplicate. The EC50 for **Substance P** was ~ **$1.4x10^{-8}$M**. The calcium assay was validated with a Z´= 0.84 for High Content Screening.

Validation of TACR1 cell line

Calcium assay (EC_{50} = 1.4 x 10^{-8}M)

A typical fluorescent calcium assay was performed using Fura-2/AM ratiometric. Calcium increase inside the cell was measured using the ratio of the fluorescence from Fura2 bound and not bound to the ion. Image acquisition was performed using a "BD Pathway 855" High-Content Bioimager from BD Biosciences.

Cells were incubated with Fura2-AM and treated with increasing Substance P concentrations.

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