



# NEUROTOXICITY

## Overview

- The neurotransmitter serotonin (5-hydroxytryptamine, 5-HT) mediates a wide range of physiological functions by interacting with multiple receptors. These receptors have been implicated as playing important roles in certain pathological and psychopathological conditions. The inhibition of these receptors can induce psychopathologies.
- Dopamine receptors are prominent in the CNS. Dopamine receptors have key roles in many processes, including the control of motivation, learning, and fine motor movement, as well as modulation of neuroendocrine signaling.
- Inhibition of serotonin and dopamine binding (5HT-1A, 5HT-1B, 5HT-2A , 5HT-1C and hD2 ) to their cognate receptors is typically undesirable: These neurotransmitters have important roles in certain pathological and psychopathological conditions.

## Protocols

Fundación MEDINA offers analyses of compound effects on neuronal receptors (serotonin receptors and dopamine receptor)

### Instrument

FLIPR Tetra, Envision, Tecan Ultra

### Analysis Methods

**Neurotransmitter receptors Inhibition assays:**  
HTRF and Fluorescence based assays

### Cell lines

Membranes used in these assays are from different cell lines, all of them are produced at Fundación MEDINA.

HeLa 5HT1A  
CHO 5HT1B  
CHO 5HT2A  
CHO 5HT2C  
CHO hD2

### Test compounds

Fundación MEDINA offers different dilution patterns :

2 concentration points

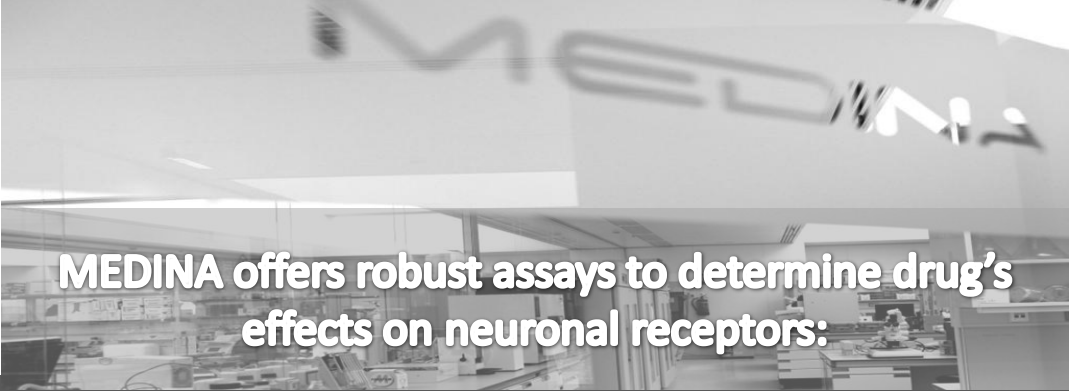
6 concentration points

10 concentration points

All compounds will be tested per triplicate

### Data reports

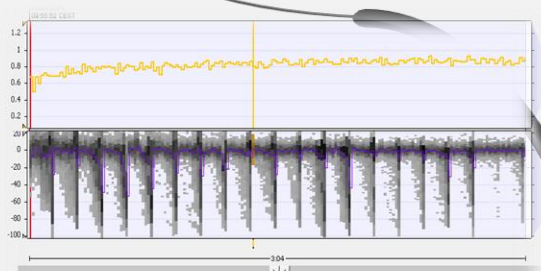
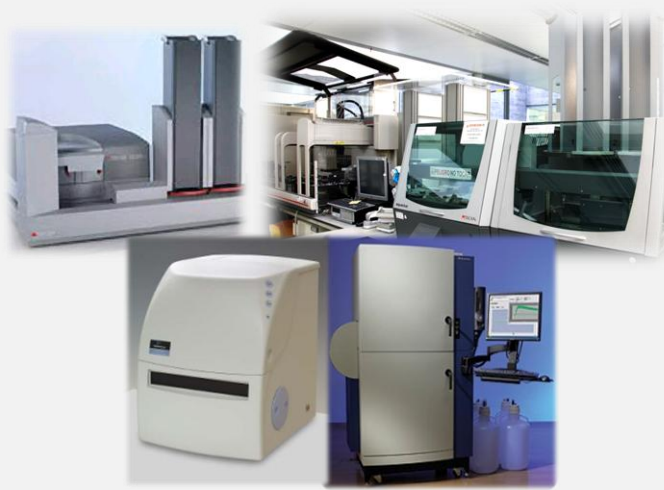
%Inh, dose-response curve, IC50.



# MEDINA offers robust assays to determine drug's effects on neuronal receptors:

## Process automation

Assay steps have been automated in order to test many compounds in the shortest time possible.

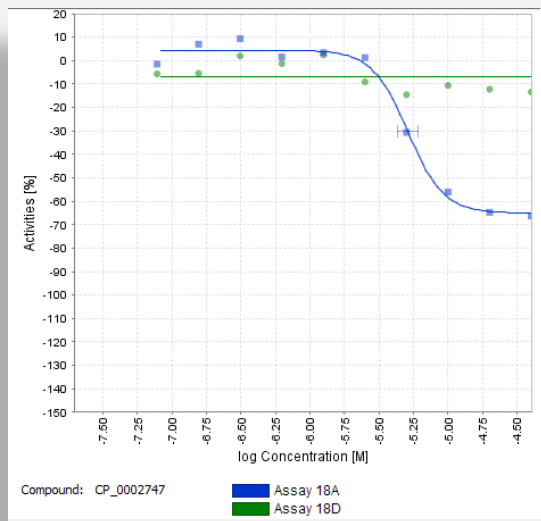
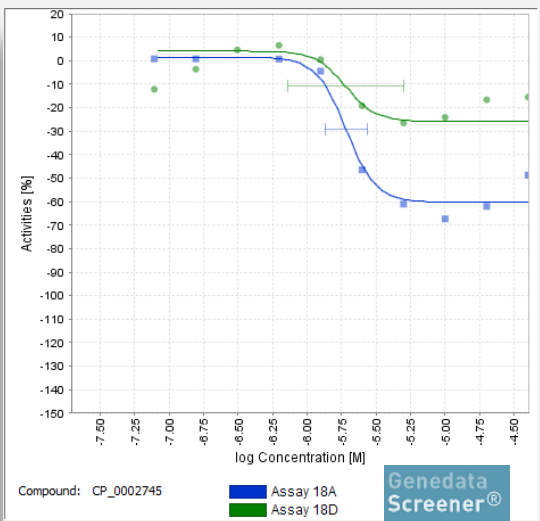


Value Type     Corrected     Derived Signal     Robust Z     Masking Sync Status  
 Normalization     Neutral Controls Minus Blanks     Signal Distribution     Compound

	Blank Control	Neutral Control	Compound		
Mean	-99.52	-0.5378	-17.44	4.206	Sig. / Back.
Median	-100	0	-3.353	0.5925	Z' Factor
Std. Dev.	3.023	10.42	32.93	0.6304	RZ' Factor
RStd. Dev.	1.791	10.53	16.05	3 & 0	Inhib. & Stim. Counts

These assays have been validated with a large number of standards and were used as reference model in a pharmaceutical company. All of the data are produced and analyzed in a high quality control environment.

## Results Analyzer



Fundación MEDINA analyzes the results, comparing the drug behavior in all of the receptors.