# PrecisION® hGABAA α5/β3/γ2 Recombinant Stable Cell Line

**Catalog Number** CYL3073 **Lot Number** See Vial

**Contents** 2 Vials, 2 x $10^6$ to 4 x $10^6$ in 1 mL

## Background Information

Gamma-aminobutyric acid (GABA)-gated ion channels are widely distributed in the mammalian brain and are major mediators of inhibitory synaptic transmission. A typical $GABA_A$ ion channel has a pentameric structure consisting of 5 protein subunits, often α, β and γ, combining to form a central ion conducting pore across the cell membrane. Additional information can be found on page 2.

## Product Information

**Description** Recombinant HEK 293 cell line expressing the human GABAA α5, β3 and γ2 ion channel subunits

**Family** Chloride, Ligand-Gated

**Target** GABAA α5/β3/γ2

| | Target Protein | Accession Number |
|---|---|---|
| 1 | GABAA α5 | NM_000810 |
| 2 | GABAA β3 | NM_000814 |
| 3 | GABAA γ2 | NM_000816 |
| 4 | N/A | N/A |

**Species** Human

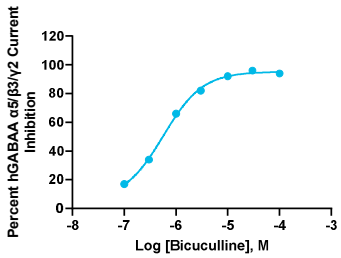
**Host Cell Type** HEK 293

**Application** Electrophysiology assay (conventional and automated patch clamp platforms)

**Storage** Vials are to be stored in vapor phase of liquid nitrogen

## Functional Performance

HEK293 cells expressing hGABAA α5/β3/γ2 were characterized in terms of their pharmacological and biophysical properties using whole-cell patch clamp techniques.




| | |
|---|---|
| **Electrophysiology Method** | IonFlux |
| **Reference Agonist** | GABAA |
| **Reference Antagonist** | Bicuculline |
| **Antagonist $IC_{50}$ (μM)** | 0.57 |

## Passage Stability

This cell line has been confirmed to be stable through at least 12 passages with no significant drop in assay window or change in pharmacology.

## Mycoplasma Testing

This lot was tested and found to be free of mycoplasma contamination. Data available upon request.

## Notes

Additional functional (pharmacological and electrophysiological) validation on multiple platforms is available upon request.

## Additional Ligand Information

| | |
|---|---|
| **Control Compound** | Bicuculline |
| **Vendor Name :** | Tocris |
| **Vendor Catalog No.** | 0130 |

## Additional Background Information

In humans there are six genes that encode α subunits, three that encode β, three that encode γ, and an additional seven genes that encode other subunits whose function is less-well understood than the α, β and γ subunits. $GABA_A$ ion channels open and close in response to secretion of GABA from presynaptic terminals. $GABA_A$ α5 channels are typically comprised of α5, β3, and γ2 subunits and this combination is preferentially expressed in the mammalian hippocampus (Wisden et al., 1992). Much pharmaceutical research interest has focused on α5-selective “inverse agonists” at the benzodiazepine (BZ) site, which decrease the current elicited by a concentration of GABA that produces a 20% response, i.e. an EC20 (Atack et al. 2006, Dawson et al. 2006). These compounds show promise as dementia treatments because in animal models they enhance cognition with minimal proconvulsant or anxiogenic side-effects.

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