

PrecisION[®] hGABAA α 4/ β 3/ γ 2 Recombinant Stable Cell Line

Catalog Number CYL3085

Lot Number

See Vial

Contents 2 Vials, 2 x 10⁶ to 4 x 10⁶ 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 ion channel has a pentameric structure consisting of 5 protein subunits, often α , β and γ or δ , 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 α 4, β 3 and γ 2 subunits

Family Chloride, Ligand-Gated

Target GABAA α 4/ β 3/ γ 2

	Target Protein	Accession Number
1	GABAA α 4	NM_000809
2	GABAA β 3	NM_000814
3	GABAA γ 2	NM_000816
4	N/A	N/A

Species Human

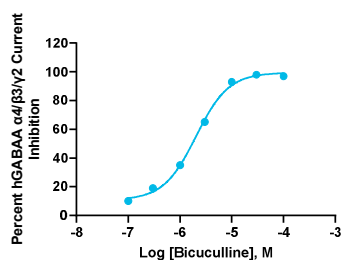
Host Cell Type HEK 293

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 α 4/ β 3/ γ 2 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 IC₅₀ (μ M) 2.04

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 ion channels open and close in response to secretion of GABA from presynaptic terminals. GABA_A $\alpha 4$ channels comprised of $\alpha 4$, $\beta 3$, and $\gamma 2$ subunits are extrasynaptic, estimated to represent <5% of all GABA_A receptors located in the brain, and insensitive to benzodiazepines (see Mohler & Rudolph 2004 and references therein). Research interest has focused on $\alpha 4$ -containing receptors because they are potentiated by concentrations of ethanol experienced by human drinkers (1-3 mM); one study showed this effect requires the δ subunit is part of the complex (Sundstrom-Poromaa et al., 2002).

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