

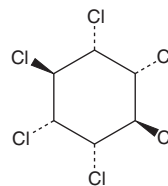
PRODUCT INFORMATION



γ -Lindane

Item No. 23952

CAS Registry No.: 58-89-9
Formal Name: 1 α ,2 α ,3 β ,4 α ,5 α ,6 β -hexachloro-cyclohexane
MF: C₆H₆Cl₆
FW: 290.8
Purity: \geq 98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: \geq 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

γ -Lindane is supplied as a crystalline solid. A stock solution may be made by dissolving the γ -lindane in the solvent of choice, which should be purged with an inert gas. γ -Lindane is soluble in organic solvents such as methanol and ethanol at a concentration of approximately 1 mg/ml. It is also soluble in chloroform and water. The solubility of γ -lindane in chloroform and water is approximately 50 and 8.35 mg/ml, respectively. We do not recommend storing the aqueous solution for more than one day.

Description

γ -Lindane is an organochloro insecticide that is an antagonist of GABA_A receptors.¹ It inhibits GABA-stimulated chloride uptake by membrane vesicles isolated from rat cerebral cortex (IC₅₀ = 68 μ M). It binds selectively to insect GABA_A receptors over mammalian GABA_A receptors in membrane preparations (IC₅₀s = 1, 12, 505, 833, and 150-1, 675 nM for fruit fly, house fly, human, mouse, and rat, respectively).^{2,3} It binds to a human recombinant β_3 homooligomer with similar selectivity as $\alpha_1\beta_3\gamma_2$ -containing receptors, indicating that the binding site for γ -lindane on GABA_A receptors is located on the β_3 subunit (IC₅₀s = 0.90, 21, and 306 nM for β_3 , $\alpha_1\beta_3\gamma_2$, and the native receptor, respectively).⁴ γ -Lindane blocks GABA- and glutamate-induced current responses in American cockroach neurons (IC₅₀s = 1.74 and 148 nM, respectively).⁵ It is toxic to mice and adult house flies (LD₅₀s = 40 and 5.5 mg/kg, respectively) and also kills head lice *in vitro* and inhibits hatching.^{4,6}

References

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3. Llorens, J., Suñol, C., Tussel, J.M., *et al.* Lindane inhibition of [³⁵S]TBPS binding to the GABA_A receptor in rat brain. *Neurotoxicol. Teratol.* **12**(6), 607-610 (1990).
4. Ratra, G.S., Kamita, S.G., and Casida, J.E. Role of human GABA_A receptor β_3 subunit in insecticide toxicity. *Toxicol. Appl. Pharmacol.* **172**(3), 233-240 (2001).
5. Ihara, M., Ishida, C., Okuda, H., *et al.* Differential blocking actions of 4'-ethynyl-4-n-propylbicycloorthobenzoate (EBOB) and γ -hexachlorocyclohexane (γ -HCH) on γ -aminobutyric acid- and glutamate-induced responses of American cockroach neurons. *Invert. Neurosci.* **5**(3-4), 157-164 (2005).
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WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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