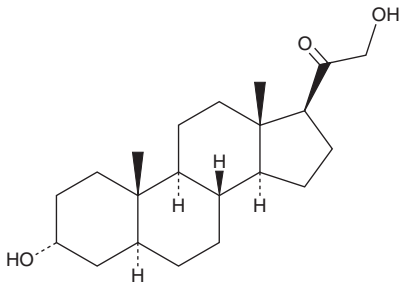
PRODUCT INFORMATION

3α,5α-THDOC

Item No. 28364

CAS Registry No.:	567-02-2
Formal Name:	(3α,5α)-3,21-dihydroxy-pregnan-20-one
Synonyms:	3α,5α-THDOC, 3α,5α-Tetrahydrodeoxycorticosterone, 5α,3α-THDOC, NSC 113927
MF:	$C_{21}H_{34}O_3$
FW:	334.5
Purity:	≥95%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

3α,5α-THDOC is supplied as a solid. A stock solution may be made by dissolving the 3α,5α-THDOC in the solvent of choice, which should be purged with an inert gas. 3α,5α-THDOC is soluble in organic solvents such as ethanol and DMSO. The solubility of 3α,5α-THDOC in these solvents is approximately 100 mM.

Description

3α,5α-THDOC is a neurosteroid and positive allosteric modulator of $GABA_A$ receptors.[1] It inhibits binding of the convulsant *t*-butylbicyclophosphorothionate (TBPS) and increases binding of the benzodiazepine flunitrazepam to rat synaptosomal membrane preparations in a concentration-dependent manner.[2] 3α,5α-THDOC potentiates GABA-induced chloride currents in cultured rat hippocampal and spinal cord neurons. It inhibits seizures induced by pilocarpine or pentylenetetrazol (PTZ; Item No. 18682) in mice (ED_{50}s = 7.3 and 15 mg/kg, respectively).[3] 3α,5α-THDOC (20 mg/kg) increases the number of entries into and percentage of time spent in the open arms of the elevated plus maze in mice, indicating anxiolytic activity.[4]

References

1. Usami, N., Yamamoto, T., Shintani, S., *et al.* Substrate specificity of human 3(20)α-hydroxysteroid dehydrogenase for neurosteroids and its inhibition by benzodiazepines. *Biol. Pharm. Bull.* **25(4),** 441-445 (2002).
2. Majewska, M.D., Harrison, N.L., Schwartz, R.D., *et al.* Steroid hormone metabolites are barbiturate-like modulators of the GABA receptor. *Science* **232(4753),** 1004-1007 (1986).
3. Kokate, T.G., Cohen, A.L., Karp, E., *et al.* Neuroactive steroids protect against pilocarpine- and kainic acid-induced limbic seizures and status epilepticus in mice. *Neuropharmacology* **35(8),** 1049-1056 (1996).
4. Rodgers, R.J. and Johnson, N.J. Behaviorally selective effects of neuroactive steroids on plus-maze anxiety in mice. *Pharmacol. Biochem. Behav.* **59(1),** 221-232 (1998).

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