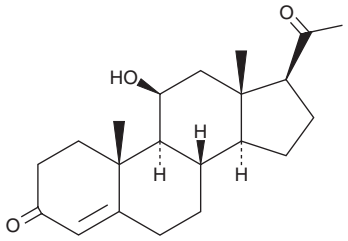
PRODUCT INFORMATION

11β-Hydroxyprogesterone

Item No. 36031

CAS Registry No.:	600-57-7
Formal Name:	11β-hydroxy-pregn-4-ene-3,20-dione
Synonyms:	21-Deoxycorticosterone, 11β-OHP, 11β-hydroxy Progesterone, NSC 15469, U-1701
MF:	$C_{21}H_{30}O_3$
FW:	330.5
Purity:	≥98%
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

11β-Hydroxyprogesterone (11β-OHP) is supplied as a solid. A stock solution may be made by dissolving the 11β-OHP in the solvent of choice, which should be purged with an inert gas. 11β-OHP is slightly soluble in acetone, chloroform, and methanol.

Description

11β-OHP is a metabolite of progesterone (Item No. 15876).[1] It is an agonist of the mineralocorticoid receptor (MR) that induces MR transactivation in a reporter assay (EC_{50} = 0.05 µM for COS-7 cells expressing the human receptor).[2] It increases sodium absorption in mpkCCDc14 murine renal cortical collecting duct cells. 11β-OHP is an inhibitor of 11β-hydroxysteroid dehydrogenase type 2 (11β-HSD2) and 11β-HSD1 (IC_{50}s = 0.140 and 1 µM, respectively).[3] It increases blood pressure in rats when administered subcutaneously at a rate of 10 µg/hour.[4] Serum levels of 11β-OHP are increased in patients with 21-hydroxylase deficiency, a type of congenital adrenal hyperplasia (CAH), characterized by masculinized genitals in female infants, irregular menses in adult females, and accelerated bone age in adolescent males.[5]

References

1. van Rooyen, D., Gent, R., Barnard, L., *et al.* The in vitro metabolism of 11β-hydroxyprogesterone and 11-ketoprogesterone to 11-ketodihydrotestosterone in the backdoor pathway. *J. Steroid Biochem. Mol. Biol.* **178**, 203-212 (2018).
2. Rafestin-Oblin, M.-E., Fagart, J., Souque, A., *et al.* 11β-hydroxyprogesterone acts as a mineralocorticoid agonist in stimulating Na^+ absorption in mammalian principal cortical collecting duct cells. *Mol. Pharmacol.* **62(6)**, 1306-1313 (2002).
3. Souness, G.W., Latif, S.A., Laurenzo, J.L., *et al.* 11α- and 11β-hydroxyprogesterone, potent inhibitors of 11β-hydroxysteroid dehydrogenase (isoforms 1 and 2), confer marked mineralocorticoid activity on corticosterone in the ADX rat. *Endocrinology* **136(4)**, 1809-1812 (1995).
4. Souness, G.W. and Morris, D.J. 11α- and 11β-hydroxyprogesterone, potent inhibitors of 11β-hydroxysteroid dehydrogenase, possess hypertensinogenic activity in the rat. *Hypertension* **27(3 Pt 1)**, 421-425 (1996).
5. Turcu, A.F., Rege, J., Chomic, R., *et al.* Profiles of 21-carbon steroids in 21-hydroxylase deficiency. *J. Clin. Endocrinol. Metab.* **100(6)**, 2283-2290 (2015).

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