

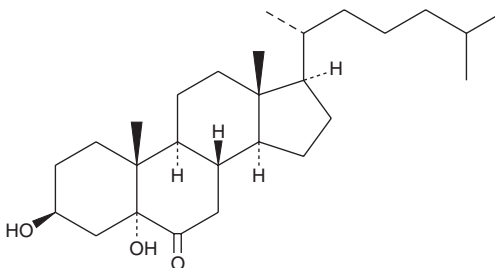
# PRODUCT INFORMATION



## 5 $\alpha$ -hydroxy-6-keto Cholesterol

Item No. 10007601

**CAS Registry No.:** 13027-33-3  
**Formal Name:** 3 $\beta$ ,5 $\alpha$ -dihydroxy-cholestan-6-one  
**Synonyms:** 6-Oxo-3,5-diol,  
Cholestane-6-oxo-3 $\beta$ ,5 $\alpha$ -diol  
**MF:** C<sub>27</sub>H<sub>46</sub>O<sub>3</sub>  
**FW:** 418.7  
**Purity:**  $\geq$ 98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 2 years



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

### Laboratory Procedures

5 $\alpha$ -hydroxy-6-keto Cholesterol is supplied as a crystalline solid. A stock solution may be made by dissolving the 5 $\alpha$ -hydroxy-6-keto cholesterol in the solvent of choice, which should be purged with an inert gas. 5 $\alpha$ -hydroxy-6-keto Cholesterol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 5 $\alpha$ -hydroxy-6-keto cholesterol in these solvents is approximately 5, 0.5, and 20 mg/ml, respectively.

### Description

Cholesterol is the most abundant neutral lipid present in the surfactant of the lung epithelial lining fluid. The double bond between carbons 5 and 6 of cholesterol is susceptible to attack by ozone within this surfactant environment. 5 $\alpha$ -hydroxy-6-keto Cholesterol (6-oxo-3,5-diol) is a major metabolite of cholesterol formed during exposure of lung epithelial cells to ozone, with formation of 5 $\beta$ ,6 $\beta$ -epoxycholesterol as a predominant precursor.<sup>1</sup> Exposure of C57BL/6J mice to 0.5-3 ppm ozone produced a dose-dependent formation of 6-oxo-3,5-diol which was detectable in the bronchialveolar lavage fluid, lavaged cells, and lung homogenates.<sup>2</sup> 6-Oxo-3,5-diol is a potent inhibitor of cholesterol synthesis in human bronchial epithelial cells with an IC<sub>50</sub> of 350 nM and exhibits significant cytotoxicity in the low  $\mu$ M range.<sup>1</sup> Therefore, the toxic effects of ozone may be mediated by formation oxysterols of this type.

### References

1. Pulfer, M.K., and Murphy, R.C. Formation of biologically active oxysterols during ozonolysis of cholesterol present in lung surfactant. *J. Biol. Chem.* **279**(25), 26331-26338 (2004).
2. Pulfer, M.K., Taube, C., Gelfand, E., *et al.* Ozone exposure in vivo and formation of biologically active oxysterols in the lung. *J. Pharmacol. Exp. Ther.* **312**(1), 256-264 (2005).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 05/10/2023

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
[WWW.CAYMANCHEM.COM](http://WWW.CAYMANCHEM.COM)