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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

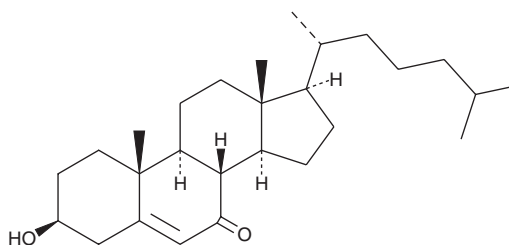
PRODUCT INFORMATION



7-keto Cholesterol

Item No. 16339

CAS Registry No.: 566-28-9
Formal Name: 3 β -hydroxy-cholest-5-en-7-one
Synonyms: Δ^5 -Cholesterol-3 β -ol-7-one,
7-oxo Cholesterol, SC-4722
MF: C₂₇H₄₄O₂
FW: 400.6
Purity: \geq 98%
UV/Vis.: λ_{max} : 238 nm
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

7-keto Cholesterol is supplied as a crystalline solid. A stock solution may be made by dissolving the 7-keto cholesterol in the solvent of choice. 7-keto Cholesterol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of 7-keto cholesterol in these solvents is approximately 20, 0.1, and 2 mg/ml, respectively.

7-keto Cholesterol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 7-keto Cholesterol should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 7-keto Cholesterol has a solubility of approximately 0.3 mg/ml in a 1:2 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

7-keto Cholesterol is a bioactive sterol and a major oxysterol component of oxidized LDL.^{1,2} It is produced by oxidation of cholesterol *via* ethanol-mediated lipid peroxidation or photodamage as well as oxidation of 7-dehydro cholesterol (Item No. 14612) by the cytochrome P450 (CYP) isoform CYP7A1.³⁻⁵ 7-keto Cholesterol inhibits CYP7A1 (IC₅₀ = \sim 1 μ M).⁴ It induces activation and chemotaxis of retinal microglia as well as polarization to a pro-inflammatory state *via* NLRP3 inflammasome activation *in vitro*.⁶ Intraocular implantation of 7-keto cholesterol coated wafers increases ocular levels of VEGF, IL-1 β , and GRO/KC, macrophage infiltration, and neovascularization in rat eye.⁷ Levels of 7-keto cholesterol in lipid deposits are increased in a variety of chronic diseases, including atherosclerosis, Alzheimer's disease, and age-related macular degeneration.

References

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2. Brown, A.J., Leong, S.I., Dean, R.T., *et al.* *J. Lipid Res.* **38**(9), 1730-1745 (1997).
3. Rodriguez, I.R. and Fliesler, S.J. *Photochem. Photobiol.* **85**(5), 1116-1125 (2009).
4. Shinkyō, R., Xu, L., Tallman, K.A., *et al.* *J. Biol. Chem.* **286**(38), 33021-33028 (2011).
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6. Indaram, M., Ma, W., Zhao, L., *et al.* *Sci. Rep.* **5**:9144, (2015).
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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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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