

## PRODUCT DATA SHEET

### 5- $\alpha$ -Cholestane

**Catalog number:** 1115

**Common names:** N/A

**Source:** synthetic

**Solubility:** chloroform, ethyl ether, hexane

**CAS number:** 481-21-0

**Molecular Formula:** C<sub>27</sub>H<sub>48</sub>

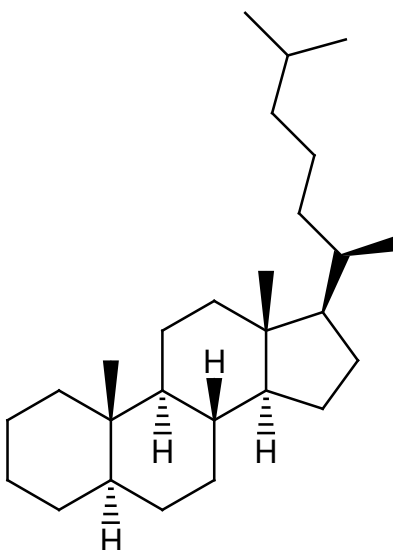
**Molecular Weight:** 373

**Storage:** -20°C

**Purity:** GC >98%

**TLC System:** chloroform/methanol (99:1)

**Appearance:** solid



### **Application Notes:**

5- $\alpha$ -Cholestane is the non-hydroxy, hydrogenated form of cholesterol and is useful as an internal standard for studies involving sterols.<sup>1</sup> Cholesterol is a sterol that is essential for all animal life, being critical for membrane permeability and fluidity and for many cellular functions. It is a sterol that is both synthesized in animals and also acquired from the diet. Phytosterols have been found to compete with cholesterol for absorption in the intestinal tract which results in a reduction of cholesterol absorption.<sup>2</sup> Plant sterols are important components of membranes and have a particular role in the plasma membrane, mitochondrial outer membrane, and endoplasmic reticulum. Plant sterols will complex with glycosphingolipids in raft-like sub-domains and can affect many cellular functions including membrane fluidity, permeability, activity of membrane-bound enzymes, cellular differentiation, cellular signaling, and cellular proliferation. Plant sterols have been used extensively in humans to attempt to lower cholesterol and treat certain cancers.<sup>3</sup>

### **Selected References:**

1. R. Iborra et al. "Advanced Glycation in macrophages induces intracellular accumulation of 7-ketocholesterol and total sterols by decreasing the expression of ABCA-1 and ABCG-1" *Lipids in Health and Disease*, vol. 10 pp. 1-7, 2011
2. R. Ostlund et al. "Phytosterols that are naturally present in commercial corn oil significantly reduce cholesterol absorption in humans" *Am J Clin Nutr*, Vol. 75(6) pp. 1000-1004, 2002
3. A. de Jong, J. Plat, R. Mensink "Metabolic effects of plant sterols and stanols (Review)" *Journal of Nutritional Biochemistry*, Vol. 14:7 pp. 362-369, 2003

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