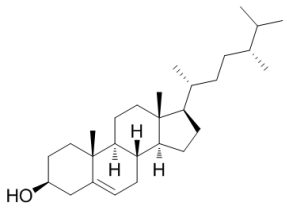
Product Name	:	Campesterol
Synonyms	:	(24R)-5-Ergosten-3β-ol
Cat No.	:	M22586
CAS Number	:	474-62-4
Molecular Formula	:	C28H48O
Formula Weight	:	400.7
Chemical Name	:	——
Description	:	Campesterol is a plant sterol with cholesterol lowering and anticarcinogenic effects, it and other plant sterols often decrease LDL cholesterol levels overall. Campesterol has anti-inflammatory effect, it inhibits several pro-inflammatory and matrix degradation mediators typically involved in osteoarthritis- induced cartilage degradation, also sometimes used to treat some specific prostate conditions.We present a comparative differential scanning calorimetric study of the effects of the animal sterol cholesterol (Chol) and the plant sterols Campesterol (Camp) and brassicasterol (Bras) on the thermotropic phase behavior of dipalmitoylphosphatidylcholine (DPPC) bilayers.METHODS AND RESULTS: Camp and Bras differ from Chol in having a C24 methyl group and, additionally for Bras, a C22 trans-double bond. Camp and especially Bras decrease the temperature, cooperativity and enthalpy of the DPPC pretransition more than Chol, although these effects are attenuated at higher sterol levels. This indicates that they destabilize gel-state DPPC bilayers to a greater extent, but are less soluble, than Chol. Not surprisingly, all three sterols have similar effects on the sterol-poor sharp component of the DPPC main phase transition. However, Camp and especially Bras less effectively increase the temperature and decrease the cooperativity and enthalpy of the broad component of the main transition than Chol. This indicates that at higher sterol concentrations, Camp and Bras are less miscible and less effective than Chol at ordering the hydrocarbon chains of the sterol-enriched fluid DPPC bilayers. CONCLUSIONS:Overall, these alkyl side chain modifications generally reduce the ability of Chol to produce its characteristic effects on DPPC bilayer physical properties. These differences are likely due to the less extended and more bent conformations of the alkyl side chains of Camp and Bras, producing sterols with a greater effective cross-sectional area and reduced length than Chol. Hence, the structure of Chol is likely optimized for maximum solubility in, as opposed to maximum ordering of, phospholipid bilayers.
Pathway	:	Proteasome/Ubiquitin
Target	:	Endogenous Metabolite
Receptor	:	Human Endogenous Metabolite
Solubility	:	——
SMILES	:	[H][C@@]12CC[C@H]([C@H](C)CC[C@@H](C)C(C)C)[C@@]1(C)CC[C@@]1([H])[C@@]2([H])CC=C2C[C@@H](O)CC[C@]12C
Storage	:	(-20℃)
Stability	:	≥ 2 years
Reference	:	



1.A comparative calorimetric study of the effects of cholesterol and the plant sterols campesterol and brassicasterol on the thermotropic phase behavior of dipalmitoylphosphatidylcholine bilayer membranes. Biochim Biophys Acta. 2014 Jul;1838(7):1941-9.