

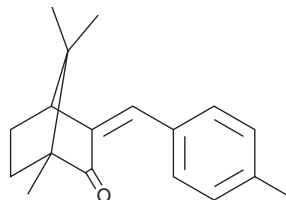
PRODUCT INFORMATION



4-Methylbenzylidene camphor

Item No. 13840

CAS Registry No.: 36861-47-9
Formal Name: 1,7,7-trimethyl-3-[(4-methylphenyl)methylene]-bicyclo[2.2.1]heptan-2-one
Synonyms: Enzacamene, Eusolex 6300, 4-MBC, Neo Heliopan MBC, Parsol 500, Uvinul MBC 95
MF: C₁₈H₂₂O
FW: 254.4
Purity: ≥98%
UV/Vis.: λ_{max}: 226, 299 nm
Supplied as: A crystalline 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

4-MBC is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-MBCX in the solvent of choice, which should be purged with an inert gas. 4-MBC is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 4-MBC in these solvents is approximately 20 mg/ml.

4-MBC is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 4-MBC should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 4-MBC 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

4-MBC is an ultraviolet light blocker used in cosmetics and sunscreen preparations that also has estrogenic activities.^{1,2} It has estrogenic activity in fish and in mammals, binding competitively to estrogen receptors and stimulating transactivation.¹ In addition to reducing receptor sensitivity to estradiol, 4-MBC directs dose-dependent changes in the expression of estrogen receptor subtypes, progesterone receptor, and androgen receptor. This results in changes in reproductive organ and brain development in both males and females.^{1,2} When applied topically, it is absorbed systemically and can be detected in urine.³

References

1. Durrer, S., Maerkel, K., Schlumpf, M., *et al.* Estrogen target gene regulation and coactivator expression in rat uterus after developmental exposure to the ultraviolet filter 4-methylbenzylidene camphor. *Endocrinology* **146**(5), 2130-2139 (2005).
2. Durrer, S., Ehnes, C., Fuetsch, M., *et al.* Estrogen sensitivity of target genes and expression of nuclear receptor co-regulators in rat prostate after pre- and postnatal exposure to the ultraviolet filter 4-methylbenzylidene camphor. *Environ. Health Perspect.* **115**, 42-50 (2007).
3. Janjua, N.R., Mogensen, B., Andersson, A.-M., *et al.* Systemic absorption of the sunscreens benzophenone-3, octyl-methoxycinnamate, and 3-(4-methyl-benzylidene) camphor after whole-body topical application and reproductive hormone levels in humans. *J. Invest. Dermatol.* **123**, 57-61 (2004).

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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