

PRODUCT INFORMATION



Chromomycin A₃

Item No. 11315

CAS Registry No.: 7059-24-7

Formal Name: (1S)-1-C-[(2S,3S)-7-[[4-O-acetyl-2,6-dideoxy-3-O-(2,6-dideoxy-4-O-methyl- α -D-lyxo-hexopyranosyl)- β -D-lyxo-hexopyranosyl]oxy]-3-[[O-4-O-acetyl-2,6-dideoxy-3-C-methyl- α -L-arabino-hexopyranosyl-(1 \rightarrow 3)-O-2,6-dideoxy- β -D-arabino-hexopyranosyl-(1 \rightarrow 3)-2,6-dideoxy- β -D-arabino-hexopyranosyl]oxy]-1,2,3,4-tetrahydro-5,10-dihydroxy-6-methyl-4-oxo-2-anthracenyl]-5-deoxy-1-O-methyl-D-threo-2-pentulose

Synonyms: Aburamycin B, CMA₃, NSC 58514

MF: C₅₇H₈₂O₂₆

FW: 1,183.3

Purity: \geq 98%

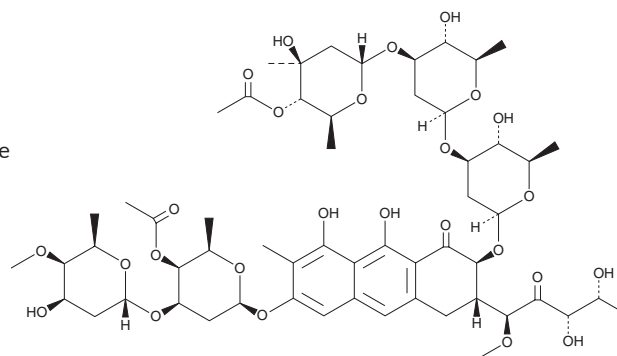
UV/Vis.: λ_{\max} : 229, 279, 414 nm

Ex./Em. Max: 445/575 nm

Supplied as: A powder

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

Chromomycin A₃ is supplied as a powder. A stock solution may be made by dissolving the chromomycin A₃ in the solvent of choice. Chromomycin A₃ is soluble in organic solvents such as ethanol, methanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of chromomycin A₃ is approximately 20 mg/ml in ethanol and DMSO and approximately 30 mg/ml in DMF.

Chromomycin A₃ is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, chromomycin A₃ should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Chromomycin A₃ has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Chromomycin A₃ is an anthraquinone antibiotic and antitumor agent isolated from *S. griseus* that is used as a fluorescent probe for DNA with excitation/emission spectra of 445/575 nm.^{1,2} Its DNA binding is specific to two or more contiguous GC base pairs, which makes it suitable for characterizing heterochromatin in plants with species-specific AT:GC ratios.^{2,3} Chromomycin A₃ is cytotoxic against non-small cell lung cancer and cervical cancer *in vitro* (IC₅₀s = 1, 42, 60, and 40 nM for HCC44, A549, ME180, and HeLa cells, respectively).^{4,5} It also inhibits oxidative stress- and DNA damage-induced neuronal injury by enhancing Sp1 and Sp3 transcription factor binding.⁶

References

1. Crissman, H.A., and Tobey, R.A. *Methods in cell biology* Academic Press, Inc. (1990).
2. Van Dyke, M.W., and Dercan, P.B. *Biochemistry* **22**(10), 2373-2377 (1983).
3. Schwarzachner, T. *Methods in molecular biology* Humana Press, (2016).
4. Hu, Y., Espindola, A.P., Stewart, N.A., et al. *Bioorg. Med. Chem.* **19**(17), 5183-5189 (2011).
5. Miller, S.C., Huang, R., Sakamuru, S., et al. *Biochem. Pharmacol.* **79**(9), 1272-1280 (2016).
6. Chatterjee, S., Zaman, K., Ryu, H., et al. *Ann. Neurol.* **49**(3), 345-354 (2001).

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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