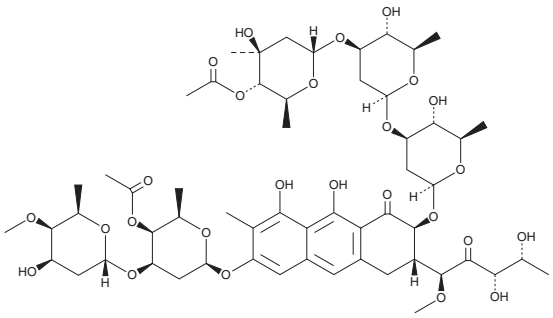
PRODUCT INFORMATION

Chromomycin A_3 (solution)

Item No. 46798



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→3)-O-2,6-dideoxy-β-D-arabino-hexopyranosyl (1→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, CMA_3, NSC 58514
MF:	$C_{57}H_{82}O_{26}$
FW:	1,183.3
Purity:	≥95%
Ex./Em. Max:	445/575 nm
Supplied as:	A 1 mM solution in DMSO
Storage:	-20°C
Stability:	≥2 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Chromomycin A_3 (solution) is supplied as a solution in DMSO. To change the solvent, simply evaporate the chromomycin A_3 (solution) under a gentle stream of nitrogen and immediately add the solvent of choice, which should be purged with an inert gas. Chromomycin A_3 (solution) is soluble (≥10 mg/ml) in ethanol and ethyl acetate.

Description

Chromomycin A_3 is an anthraquinone antitumor agent isolated from *S. griseus* that is used as a fluorescent probe for DNA with excitation/emission maxima 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 A_3 is cytotoxic against non-small cell lung cancer and cervical cancer *in vitro* (IC_{50}s = 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. **33,** (1990).
2. Van Dyke, M.W., and Dercan, P.B. Chromomycin, mithramycin, and olivomycin binding sites on heterogeneous deoxyribonucleic acid. Footprinting with (methidiumpropyl-EDTA)iron(II). *Biochemistry* **22(10),** 2373-2377 (1983).
3. Schwarzacher, T. Methods in molecular biology. **1370,** (2016).
4. Hu, Y., Espindola, A.P., Stewart, N.A., *et al.* Chromomycin SA analogs from a marine-derived *Streptomyces* sp. *Bioorg. Med. Chem.* **19(17),** 5183-5189 (2011).
5. Miller, S.C., Huang, R., Sakamuru, S., *et al.* Identification of known drugs that act as inhibitors of NF-κB signaling and their mechanism of action. *Biochem. Pharmacol.* **79(9),** 1272-1280 (2016).
6. Chatterjee, S., Zaman, K., Ryu, H., *et al.* Sequence-selective DNA binding drugs mithramycin A and chromomycin A3 are potent inhibitors of neuronal apoptosis induced by oxidative stress and DNA damage in cortical neurons. *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.

WARRANTY AND LIMITATION OF REMEDY
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