Store at -20°C

Chromomycin A3

#79929

1 mg

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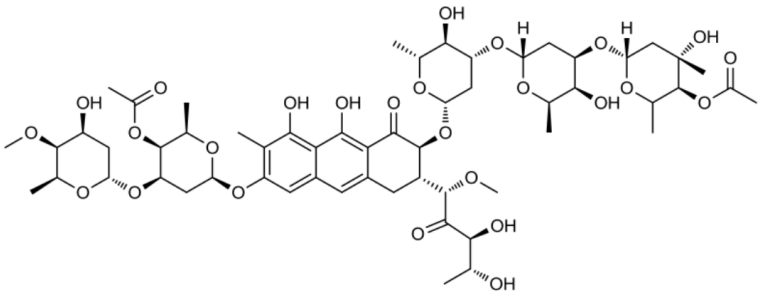
Background: Chromomycin A3 is an antibiotic that binds to the GC-rich sequence of DNA in the presence of divalent cations, inhibiting DNA replication and transcription (1). It is also used as a fluorescent DNA stain, and is particularly useful in staining human sperm chromatin in fertility and protamine deficiency studies (2). An analog of Mithramycin A, Chromomycin A3 displays many of the same DNA-binding and transcriptional regulation properties. For example, Chromomycin A3 suppresses a similar set of specificity protein 1 (SP1)-related anti-apoptotic proteins as Mithramycin A, and effectively inhibits cell proliferation more strongly than Mithramycin A. In a comparative treatment of cervical cancer cells, Chromomycin A3 displayed an IC_{50} that was 4-10 times higher than the same cells treated with Mithramycin A. In several clinical studies, Chromomycin A3 exhibited anti-cancer effects in individuals with breast cancer, Hodgkin's disease, lung adenocarcinoma, melanoma, and rhabdomyosarcoma; however, there were also inconsistent treatment results and some harmful side effects (3).

Molecular Formula: $C_{57}H_{82}O_{26}$



Molecular Weight: 1183.3 g/mol

Purity: >98%

CAS: 7059-24-7

Solubility: Soluble in DMSO at 20 mg/mL.

Storage: Store lyophilized at -20ºC, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at -20ºC and use within 1 month to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

Directions for Use: Chromomycin A3 is supplied as a lyophilized powder. For a 1 mM stock, reconstitute 5 mg of powder in 0.84 mL of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

Background References:

(1) Chatterjee, S. et al. (2001) *Ann Neurol* 49, 345-54.

(2) Lolis, D. et al. (1996) *Int J Androl* 19, 23-7.

(3) Saranaruk, P. et al. (2020) *Int J Mol Med* 45, 1005-1016.

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Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.