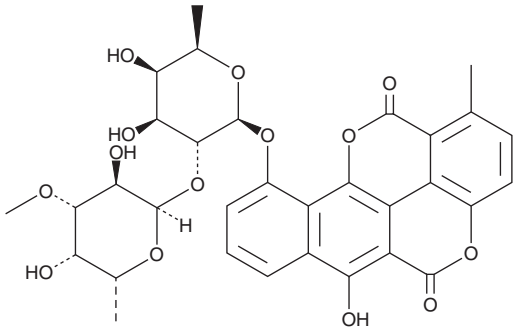
PRODUCT INFORMATION

Chartreusin

Item No. 23773

CAS Registry No.: 6377-18-0
Formal Name: 10-[[6-deoxy-2-O-(6-deoxy-3-O-methyl-α-D-galactopyranosyl)-β-D-galactopyranosyl]oxy]-6-hydroxy-1-methyl-benzo[h][1]benzopyrano[5,4,3-cde][1]benzopyran-5,12-dione
Synonyms: Antibiotic X 465A, Lambdamycin, NSC 5159
MF: $C_{32}H_{32}O_{14}$
FW: 640.6
Purity: ≥98%
UV/Vis.: λ_{max}: 236, 268, 331, 400, 423 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

Chartreusin is supplied as a crystalline solid. A stock solution may be made by dissolving the chartreusin in the solvent of choice, which should be purged with an inert gas. Chartreusin is soluble in organic solvents such as acetone and DMSO. The solubility of chartreusin in DMSO is approximately 10 mg/ml. Chartreusin is also slightly soluble in methanol.

Description

Chartreusin is an antibiotic originally isolated from *S. chartreusis* with diverse biological activities.[1] It inhibits growth of *S. aureus*, *B. subtilis*, *M. luteus*, *M. flavus*, *B. fragilis*, *C. difficile*, *C. perfringens*, and *P. acnes* (MICs = 0.4-12.5 µg/ml).[2] Chartreusin binds to DNA and induces electrophoretic shifts in both supercoiled and nicked plasmid DNA.[3] It also inhibits strand-passing activity of topoisomerase II in a P4 unknotting assay. Chartreusin inhibits protein synthesis in chick embryo fibroblasts (CEFs) and mouse fibroblast 3T6 cells (IC_{50}s = 7 and 70 µM, respectively).[4] It is cytotoxic to human lung carcinoma A549 cells *in vitro* (IC_{50} = 95 nM) and increases median survival in P388 leukemia and B16 melanoma mouse tumor models when administered at a dose of 10 mg/kg per day.[2,3]

References

1. Leach, B.E., Calhoun, K.M., Johnson, L.E., *et al.* Chartreusin, a new antibiotic produced by *Streptomyces chartreusis*, a new species. *J. Am. Chem. Soc.* **75(16)**, 4011-4012 (1953).
2. Konishi, M., Sugawara, K., Kofu, F., *et al.* Elsamicins, new antitumor antibiotics related to chartreusin. I. Production, isolation, characterization and antitumor activity. *J. Antibiot. (Tokyo)* **39(6)**, 784-791 (1986).
3. Lorico, A. and Long, B.H. Biochemical characterisation of elsamicin and other coumarin-related antitumour agents as potent inhibitors of human topoisomerase II. *Eur. J. Cancer* **29A(14)**, 1985-1991 (1993).
4. Contreras, A., Vazquez, D., and Carrasco, L. Inhibition, by selected antibiotics, of protein synthesis in cells growing in tissue cultures. *J. Antibiot. (Tokyo)* **31(6)**, 598-602 (1978).

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