Aphidicolin
PRODUCT DATA SHEET

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Product Name:	Aphidicolin
Product Number:	A103
CAS Number:	38966-21-1
Molecular Formula:	$C_{20}H_{34}O_4$
Molecular Weight:	338.5
Appearance:	White to off-white powder
Storage Conditions:	-20°C
Description:	Aphidicolin is a tetracyclic diterpene antibiotic isolated from fungi, notably Cephalosporium, Nigrospora, Harziella and Phoma. Aphidicolin has antibiotic, antiviral and antimitotic properties, blocking the cell cycle at early S-phase. This property has been used to synchronise cell division and is useful as a tool in cell differentiation research. Aphidicolin induces apoptosis, prolongs the half-life of DNA methyltransferase, is active against Leishmania parasites and acts synergistically with the antitumor agents, vincristine and doxorubicin. Aphidicolin is soluble in ethanol, methanol, DMF and DMSO and has limited water solubility.
Mechanism of Action:	Aphidicolin is a reversible inhibitor of DNA replication by inhibiting selected DNA polymerases.
References:	X-Ray crystallographic determination of the structure of the antibiotic aphidicolin: a tetracyclic diterpenoid containing a new ring system. Brundret K.M. et al. , J.C.S. Chem. Commun. 1972, 1027. The production of aphidicolin by Nigrospora sphaerica. Starratt A.N. & Loschiavo S.R., Can. J. Microbiol. 1974, 20, 416. Synchronization of cell division in eight-cell bovine embryos produced in vitro: Effects of aphidicolin. Samake S. & Smith L.C., Theriogenology 1997, 48, 969. Effect of aphidicolin on DNA methyltransferase in the nucleus. Suetake I. et al. , Cell Struct. Funct. 1998, 23, 137. Cytotoxicity of aphidicolin and its derivatives against neuroblastoma cells in vitro: synergism with doxorubicin and vincristine. Michaelis M. et al. , Anticancer Drugs 2000, 11, 479. Antileishmanial activities of aphidicolin and its semisynthetic derivatives. Kayser O. et al. , Antimicrob. Agents Chemother. 2001, 45, 288.