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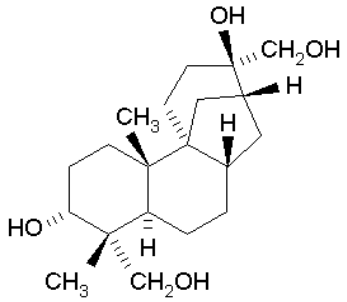
Product Information

Aphidicolin
from *Nigrospora sphaerica*

Catalog Number **A0781**
Storage Temperature 2-8 °C

CAS RN 38966-21-1
Synonyms: ICI 69653, NSC-234714



Product Description
Molecular formula: $C_{20}H_{34}O_4$
Molecular weight: 338.48

Melting point: 227-233 °C[1]

$[\alpha]^{27}_D$: +12° (c = 1 in methanol)[1,2]

Product Description
Aphidicolin is a tetracyclic diterpene with antiviral and antimitotic properties used for cell cycle synchronization in various cell lines.[3-9]

Aphidicolin inhibits the growth of eukaryotic cells and the growth of certain animal viruses with no effect on prokaryotic cells growth. It specifically inhibits DNA polymerase α, which is responsible for DNA replication.[4,10-12] It also inhibits α-like DNA polymerases of plants and yeasts,[3] but does not inhibit synthesis of RNA and proteins.[13] Aphidicolin specifically competes for the dCTP-specific binding site on DNA polymerase α.[11,14]

DNA synthesis was inhibited in Ehrlich ascites tumor cells using Aphidicolin at 0.02–2 µg/mL,[13] and at 100 µg/mL in *Xenopus* egg extracts.[15] Treatment with aphidicolin reversibly arrests parasitic cell cycle leading to the accumulation of cells at the G_1/S phase.[16] FRA3B is the most common human fragile site, situated on chromosome band 3p14.2.[17,18] Under normal conditions this site is stable, but upon treatment with aphidicolin, it displays gaps and breaks.[19] Ataxia telangiectasia kinase (ATR) enzyme is a major damage sensor protein, which responds to stalled and collapsed replication forks.[19] Aphidicolin serves as a tool in studies of ATR DNA binding and activity.[19]

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
Aphidicolin is freely soluble in methanol. It is also soluble at 10 mg/mL in DMSO and at 1 mg/mL in ethanol. For tissue culture applications, a stock solution prepared in DMSO is preferred. It is poorly soluble in water.

Storage/Stability
Store desiccated and protected from light at 2-8 °C. Under these conditions the product is stable for 3 years. A solution of aphidicolin in ethanol is stable for at least one week when stored at 4 °C.

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