

Catalog Number: CM13243

产品信息

Catalog Number:
CM13243

CAS号:
14930-96-2

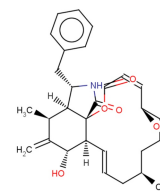
分子式:
C₂₉H₃₇NO₅

主要靶点:
Arp2/3 Complex

主要通路:
细胞骨架

分子量:
479.617

溶解度:
DMSO:20 mg/mL (41.7
mM),Ethanol:20 mg/mL (41.7 mM)



靶点活性

F-actin (Mg²⁺):2.2 nM (Kd)|F-actin (Mg²⁺/K⁺):1.4 nM (Kd)

体外活性

Cytochalasin B is a cell-permeable mycotoxin binding to the barbed end of actin filaments, inhibits the elongation and shortening of actin filaments, with Kds of 2.2 nM and 1.4 nM for F-actin in the presence of MgCl₂ (2 mM) or MgCl₂ (2 mM) plus KCl, respectively [1]. Cytochalasin B (6 μM) increases the myofibrillar fragmentation index, which is attributed to the intensely breaking of myofibrillar proteins into short segments. Cytochalasin B also accelerates the disruption of actin filaments. In addition, Cytochalasin B accelerates the transformation from F-actin to G-actin, lowering the content of F-actin and significantly increasing G-actin bands during postmortem conditioning [2]. Cytochalasin B (0.1-10 μM) shows inhibitory effect on multiple murine cancer cell lines, with IC₅₀s of 2.56 μM (M109c), 10.46 μM (B16BL6), 105.5 μM (P388/ADR), 51.9 μM (P388/S) and IC₈₀s of 12.23 μM (M109c), 44.86 μM (B16BL6), 188.4 μM (P388/ADR), 84.1 μM (P388/S) after treatment for 3 h, with IC₅₀s of 0.25 μM (M109c), 0.37 μM (B16F10), 0.87 μM (B16BL6), and IC₈₀s of 0.75 μM (M109c), 1.21 μM (B16F10) after treatment for 4 days [3].

体内活性

Cytochalasin B (10, 25, 50 mg/kg, i.p.) dose-dependently increases the life expectancy of Balb/c mice bearing with P388/ADR leukemias. Cytochalasin B at 50 mg/kg produces 10 % long-term survival in the multidrug-resistant P388/ADR cohort, and 40 % long-term survival in the drug-sensitive P388/S cohort [3].

动物实验

For chemotherapy testing, Balb/c mice under isoflurane anesthesia are challenged with 2×10⁵ trypan blue negative P388/S or P388/ADR cells subcutaneously (s.c.) in a volume of 200 μL. Untreated mice are kept in order to determine the lethality of the challenge without chemotherapeutic intervention. Long-term survival is defined as challenged mice that survive the duration of the observation period. Cytochalasins B and D are prepared in suspension form in 2 % carboxymethyl cellulose 1 % tween 20 (CMC/Tw) for intraperitoneal (i.p.) administration. The congeners or the vehicle are administered to leukemia-challenged mice on Days 1-8 following the initial challenge [2].

细胞实验

The attached cell lines M109c, B16BL6, and B16F10 are seeded at 1 to 4×10⁴ cells/mL in 2 mL volumes in 24-well culture plates 1 day prior to treatment with Cytochalasin B. The suspension culture of P388/ADR cells is seeded at 5×10⁴ cells/mL and allowed to grow overnight before Cytochalasin B treatment. Cells are treated with Cytochalasin B for 3 h, as well as 2, 3, or 4 days. In the case of continuous exposure for 2, 3, or 4 days, attached cells are trypsinized and counted with a hemacytometer. Leukemia cell suspensions are counted with a Coulter Counter. In the case of short-term exposure, cells are washed twice with fresh medium, then trypsinized (except for P388/ADR cells), reseeded, and allowed to regrow for 3 days, at which time they are counted. Growth results are calculated as the number of cells generated above the seeding density compared to the untreated control cells and graphically presented as a percent of control increase [3].

描述

Cytochalasin B is a mycotoxin binding to the barbed end of actin filaments. It can disrupt the formation of actin polymers (Kd: 1.4-2.2 nM for F-actin).

储存

Powder: -20°C for 3 years | In solvent: -80°C for 2 years