Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

Methylthiouracil

Catalog No: tcsc2723

Available Sizes

Size: 50mg

Size: 100mg

Specifications

CAS No:
56-04-2

Formula:
$C_5H_6N_2OS$

Pathway:
Immunology/Inflammation;Stem Cell/Wnt;MAPK/ERK Pathway;Apoptosis;NF-κB

Target:
Interleukin Related;ERK;ERK;TNF Receptor;NF-κB

Purity / Grade:
>98%

Solubility:
10 mM in DMSO

Alternative Names:
MTU

Observed Molecular Weight:
142.18

Product Description

Methylthiouracil is an antithyroid agent. Methylthiouracil suppresses the production **TNF-α** and **IL-6**, and the activation of **NF-κB** and **ERK1/2**.

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IC50 & Target: TNF-α, IL-6, ERK1/2, NF-κB[1]

In Vitro: HUVECs are treated with various concentrations of MTU (0-20 μM) for 6 h after the addition of LPS (100 ng/mL) for 4 h. MTU inhibits LPS-mediated hyperpermeability in endothelial cells, with the optimal effect occurring at a concentration above 5 μM. The effects of MTU are examined on HUVEC actin cytoskeletal arrangement by immunofluorescence staining of HUVEC monolayers with F-actin labeled fluorescein phalloidin. Control HUVECs exhibit a random distribution of F-actin throughout the cells, with some localization of actin filament bundles at the cell boundaries. Barrier disruption by LPS (100 ng/mL) is manifested by the formation of paracellular gaps in HUVECs. In addition, post-treatment with MTU (10 or 20 μM) results in inhibited formation of LPS-induced paracellular gaps with the formation of dense F-actin rings. To test the cytotoxicity of MTU, cellular viability assays are performed in HUVECs treated with MTU for 24 h. At concentrations up to 20 μM, MTU does not affect cell viability[1].

In Vivo: MTU treatment results in marked inhibition of the peritoneal leakage of dye induced by LPS. The average circulating blood volume for mice is 72 mL/kg. Because the average mouse weight in this study is 27 g, and the average blood volume is 2 mL, the injected MTU (142 or 284 μg/kg) results in a maximum concentration of 10 or 20 μM in the peripheral blood[1].