

Rotenone

货号: R1866

储存条件: 粉末-20°C 可保存 3 年; 液体-80°C 可保存 12 月。

产品描述

Rotenone is a classical mitochondrial complex I inhibitor that blocks the electron transfer of mitochondrial respiration chain. It inhibits NADH oxidase and NADH/DB oxidoreductase with IC₅₀ values of 5.1 and 28.8 nM, respectively. Rotenone blocked the proliferation of MCF-7 and Hela cells by inhibiting the reassembly of microtubules with half inhibitory concentrations of 0.4 and 0.2 μM, respectively. In substantia nigra pars compacta neurons, 1 μM rotenone stimulated a tolbutamide-sensitive outward current (94 pA) accompanied with the accumulation of intracellular [Na⁺] and [Ca²⁺]. Rotenone infusion (2 mg/kg/day for 2 days) in Lewis rats resulted in reduced binding of [3H]dihydrorotenone and complex I throughout the brain, while the enzymatic activities of cytochrome oxidase and succinate dehydrogenase remained unaffected. Systemic rotenone infusion (2.5 mg/kg/day) for 7 – 33 days led to progressive nigrostriatal dopaminergic degeneration in the brain. Compared to nigral cell bodies, striatal nerve terminals were affected more severely and earlier by rotenone infusion.

作用机制

Rotenone is a lipophilic inhibitor for complex I in mitochondrial electron transport chain that blocks the electron transfer from complex I to ubiquinone, thereby inhibiting oxidative phosphorylation and suppressing the synthesis of ATP.

产品信息

CAS 号	83-79-4	
分子式	C ₂₃ H ₂₂ O ₆	
分子量	394.42	
溶解度	DMSO	55.0 mg/mL (139.4 mM)
	Water	Insoluble
	Ethanol	2.0 mg/mL (5.1 mM)

