Data Sheet (Cat.No.T213050)

TargetMol

NF-κB-IN-20

Chemical Properties

CAS No. :

Formula:

Molecular Weight:

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	NF-κB-IN-20 is an orally bioavailable inhibitor of NF-κB. By binding directly to the Keap1 protein, NF-κB-IN-20 activates the Keap1/Nrf2/HO-1 antioxidant pathway and concurrently inhibits the NF-κB inflammatory pathway, working synergistically to reduce oxidative stress and inflammation. Additionally, NF-κB-IN-20 M11 suppresses the expression of IL-6, IL-1β, and TNF-α, significantly decreases ROS levels, and restores mitochondrial membrane potential. This compound is applicable in studies of acute lung injury (ALI).
Targets(IC50)	NF-κB
In vitro	NF-κB-IN-20 (Compound M11), when tested at concentrations ranging from 0.01 to 100 μM for 5 hours, demonstrates significant in vitro safety (with a half maximal cytotoxic concentration, CC 50, greater than 100 μM) in LPS-induced Raw264.7 cells. It effectively reduces the mRNA levels of inflammatory and oxidative stress markers such as IL-6 (IC 50 = 6.55 μM), IL-1β, TNF-α, and SOD in a dose-dependent manner. Additionally, it inhibits reactive oxygen species (ROS) expression and enhances mitochondrial membrane potential, thereby mitigating LPS-induced cellular damage.
In vivo	NF-κB-IN-20 (Compound M11) administered orally at doses of 15-60 mg/kg once daily for 7 days alleviates lung damage and oxidative stress in mice caused by acute lung injury, while also inhibiting collagen formation and M1 macrophage polarization. Additionally, this compound increases sputum secretion and reduces cough symptoms, contributing to the treatment of pulmonary diseases. Furthermore, a single dose of NF-κB-IN-20 at 500 mg/kg administered orally demonstrated favorable in vivo safety profiles in SD rats over a 14-day observation period.