Data Sheet (Cat.No.T209380)

TargetMol

NLRP3-IN-32

Chemical Properties

CAS No. :

Formula: C21H22BrN3O

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	NLRP3-IN-32 (compound 7a) is a derivative of 3,4-dihydronaphthalene-1(2H)-one and acts as an inhibitor of the NLRP3 inflammasome. It obstructs the assembly and activation of the NLRP3 inflammasome by downregulating the expression of NLRP3 and the apoptosis-associated speck-like protein containing a CARD (ASC), thereby reducing the production of reactive oxygen species (ROS) and other inflammatory mediators. Additionally, NLRP3-IN-32 inhibits the phosphorylation of IκBα and NF-κB/p65, as well as the nuclear translocation of p65, thus suppressing NF-κB signaling.
Targets(IC50)	NF-κB,Reactive Oxygen Species,NOD-like Receptor (NLR),IκB/IKK
In vitro	NLRP3-IN-32 (compound 7a; 1.5, 3, 6 μM) reverses the release of inflammatory cytokines TNF-α, IL-6, IL-18, and IL-1β in LPS-stimulated RAW246.7 macrophages in a dose-dependent manner. Additionally, it dose-dependently clears intracellular ROS and NO production induced by LPS, while inhibiting the activation of NLRP3 inflammasomes. NLRP3-IN-32 exhibits low cytotoxicity in RAW246.7 cells with apoptosis rates of 3.8%, 5.6%, and 6.8% at the respective concentrations. Furthermore, it inhibits LPS (1.0 μg/mL; 2 hours) induced phosphorylation of IκBα and p65, thereby suppressing the activation of the NF-κB signaling pathway in a dose-dependent manner over a 24-hour period.

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