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IRAK inhibitor 1

Catalog No: tcsc0603

Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg

Specifications

CAS No:
1042224-63-4

Formula:
$C_{17}H_{19}N_5$

Pathway:
Immunology/Inflammation;Protein Tyrosine Kinase/RTK

Target:
IRAK;IRAK

Purity / Grade:
>98%

Solubility:
DMSO : 12.2 mg/mL (41.59 mM; Need ultrasonic and warming)

Observed Molecular Weight:
293.37

Product Description

IRAK inhibitor 1 is a potent **IRAK-4** inhibitor with **IC_{50}** of 216 nM, is poorly active against JNK-1 and JNK-2 with **IC_{50}** of 3.801 μM, and

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>10 μM, respectively.

IC50 & Target: IC50: 216 nM (IRAK-4), 3.801 μM (JNK-1), >10 μM (JNK-2)[1]

In Vitro: IRAK inhibitor 1 possesses significant potency in an IRAK-4 enzyme assay but is poorly active against JNK-1 and JNK-2[1]. IRAK-4 is a novel member of the IRAK family with unique functional properties. IRAK-4 is the closest human homolog to Pelle. Endogenous IRAK-4 interacts with IRAK-1 and TRAF6 in an IL-1-dependent manner, and overexpression of IRAK-4 can activate NF-κB as well as mitogen-activated protein (MAP) kinase pathways. Most strikingly, and in contrast to the other IRAKs, IRAK-4 depends on its kinase activity to activate NF-κB. In addition, IRAK-4 is able to phosphorylate IRAK-1, and overexpression of dominant-negative IRAK-4 is blocking the IL-1-induced activation and modification of IRAK-1, suggesting a role of IRAK-4 as a central element in the early signal transduction of Toll/IL-1 receptors, upstream of IRAK-1. IRAK-4 shares the domain structure of the other IRAKs and it is able to activate similar signal transduction pathways, namely NF-κB and MAPK pathways. It rapidly and transiently associates with IRAK-1 and TRAF6 in an IL-1-dependent manner but it is not functionally redundant with IRAK-1. IRAK-4 is an active protein kinase and requires its kinase activity to activate NF-κB. IRAK-4 might act upstream of IRAK-1 as an IRAK-1 activator[2].