Revision 1

Store at -20C

RIPA-56

#67765

5 mg

Cell Signaling TECHNOLOGY®

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Background

RIPA-56 is a potent, selective, and metabolically stable inhibitor of receptor-interacting protein 1 (RIP1) kinase with an IC_{50} value of 13 nM, with no effect on RIP3 kinase activity at a 10 µM concentration. RIPA-56 has been shown to reduce TNFα-induced mortality and multiorgan damage in systemic inflammatory response syndrome (SIRS) (1). Blocking the activity of RIP1 kinase allows for cell survival and proliferation in the presence of death receptor ligands. *In vivo* studies have also shown that necroptosis can be inhibited in the testes of busulfan-induced mice by the suppression of RIP1 kinase with RIPA-56 (2). This small molecule can protect myelin structures by blocking the demyelination and inflammation of spinal cord white matter in mice experimental autoimmune encephalomyelitis (EAE)-induced models, halting the progression of multiple sclerosis (MS) (3).

Molecular Formula

$C_{13}H_{19}NO_2$

Molecular Weight

221.3 g/mol

Purity

>98%

CAS

1956370-21-0

Solubility

Soluble in DMSO at 50 mg/ml or ethanol at 50 mg/ml.

Storage

Store lyophilized at -20ºC, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at -20ºC and use within 3 months to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

Directions for Use

RIPA-56 is supplied as a lyophilized powder. For a 20 mM stock, reconstitute 5 mg of powder in 1.13 ml of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

Background References

1. Ren, Y. et al. (2017) *J Med Chem* 60, 972-86.
2. Xie, Y. et al. (2020) *Stem Cells Dev* 29, 475-87.
3. Zhang, S. et al. (2019) *Proc Natl Acad Sci U S A* 116, 5675-80.

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