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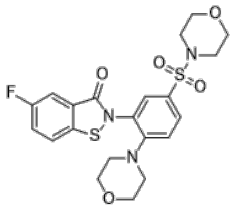
Data Sheet

Global Supplier of Chemical Probes, Inhibitors & Agonists.

Product Name	:	ML345
Cat. No.	:	PC-25784
CAS No.	:	1632125-79-1
Molecular Formula	:	$C_{21}H_{22}FN_3O_5S_2$
Molecular Weight	:	479.54
Target	:	Other Targets
Solubility	:	10 mM in DMSO



CAS: 1632125-79-1

Biological Activity

ML345 is a potent, selective Insulin-degrading enzyme (IDE, Insulysin) with IC50 of 188 nM, targets a specific cysteine residue (Cys819) in IDE, also is a highly potent and selective NLRP3 inhibitor, directly targets tyrosine 381 (Y381) and disrupts its essential interaction with NIMA-related kinase 7 (NEK7).
inhibits IL-1β release in immortalized BMDMs (iBMDMs) with IC50 of 197.7 nM.
ML345 potently blocks inflammasome-driven cytokine maturation and pyroptosis.
ML345 dose-dependently reduced IL-1β secretion without altering TNF production in primary human PBMCs stimulated with nigericin.
ML345 selectively inhibits NLRP3 inflammasome activation without affecting other inflammasomes (NLRP6, NLRP1/CARD8, or Pyrin inflammasomes).
ML345 disrupts the NEK7-NLRP3 interaction to prevent inflammasome activation, which is independent of IDE.
ML345 inhibits LPS-induced systemic inflammation and miscarriage in mouse models of systemic inflammation and miscarriage.

References

Bannister TD, et al. 2012 Dec 17 [updated 2014 May 13]. In: Probe Reports from the NIH Molecular Libraries Program [Internet].

Lin H, et al. Mol Biomed. 2025 Nov 13;6(1):108.

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