

Product Data Sheet

Product Name: IMP-1088

Cat. No.: GC40101

Chemical Properties

Cas. No. 2059148-82-0

Chemical Name 5-[3,4-difluoro-2-[2-(1,3,5-trimethyl-1H-pyrazol-4-yl)ethoxy]phenyl]-N,N,1-trimethyl-1H-indazole-3-methanamine

SMILES FC1=C(F)C=CC(C2=CC=C(N(C)N=C3CN(C)C)C3=C2)=C1OCCC4=C(C)N(C)N=C4C

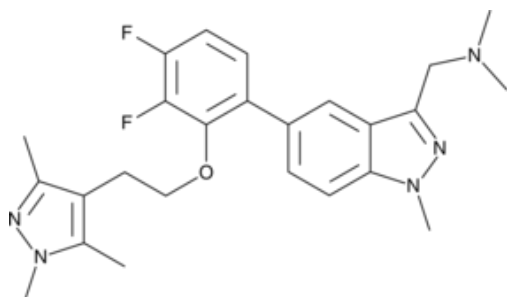
Formula $C_{25}H_{29}F_2N_5O$ M.Wt 453.5

Solubility A solution in methyl acetate Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

Cell lines Breast cancer MDA-MB-231 cells and cervical cancer HeLa cells

Preparation Method MDA-MB-231 cells and cervical cancer HeLa cells were Exposure to IMP-1088 (1μM) for 18h.

Caution: Product has not been fully validated for medical applications. For research use only.

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Reaction
Conditions 1µM; 18h

Applications Exposure to IMP-1088 (1µM) for 18h significantly inhibited N-myristoylation of the majority of NMT substrate proteins identified but did not reduce protein synthesis or alter cell cycles.

References:

[1] Kallemeijn W W, Lueg G A, Faronato M, et al. Validation and Invalidation of Chemical Probes for the Human N-myristoyltransferases. Cell Chem Biol. 2019 Jun 20;26(6):892-900.e4.

Background

IMP-1088 is a picomolar dual inhibitor of the human *N*-myristoyltransferases NMT1 with IC₅₀ value of 0.24nM and NMT2 with IC₅₀ value < 1nM.^[1] IMP-1088 exhibits broad-spectrum antiviral potential, targeting mammarenaviruses, respiratory rhinoviruses, and malaria parasites^{[2][3]}.

In vitro, IMP-1088 exposure (1mM to 0.1pM) on breast cancer MDA-MB-231 cells and cervical cancer HeLa cells for 24, 48 or 72h affected proliferation of MDA-MB-231 and HELA cells only after 48 and 72h and in a concentration-dependent manner. IMP-1088 exposure (1µM) for 18h significantly inhibited N-myristoylation of the majority of NMT substrate proteins identified but did not reduce protein synthesis or alter cell cycles^[4]. IMP-1088 (1µM) treated HEK293T cells transfected with plasmids expressing lymphocytic choriomeningitis virus polymerase proteins and nucleoprotein for 24h targeting Z protein myristoylation impairs virus assembly and budding without affecting Z-mediated inhibition of viral ribonucleoprotein (vRNP) activity^[5]. IMP-1088 (0.001-100µM) treated HeLa cells infected with Vaccinia virus (VACV) for 24h caused a reduction of > 50% in both virus yield and viral spread at approximately 100nM, without cellular toxicity observed in the presence of up to 10µM IMP-1088^[6].

References:

[1] Mousnier A, Bell A S, Swieboda D P, et al. Fragment-derived inhibitors of human N-myristoyltransferase block capsid assembly and replication of the common cold virus. Nat

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Chem. 2018 Jun;10(6):599-606.

[2] Agoni C, Salifu E Y, Enslin G, Kwofie S K, Soliman M E. Dual-Inhibition of Human N-Myristoyltransferase Subtypes Halts Common Cold Pathogenesis: Atomistic Perspectives from the Case of IMP-1088. Chem Biodivers. 2022 Feb;19(2):e2021007.

[3] Mendez A, Bolling C, Taylor S, et al. Structure of Plasmodium vivax N-myristoyltransferase with inhibitor IMP-1088: exploring an NMT inhibitor for antimalarial therapy. Acta Crystallogr F Struct Biol Commun. 2025 Jan 1;81(Pt 1):1-10.

[4] Kallemijn W W, Lueg G A, Faronato M, et al. Validation and Invalidation of Chemical Probes for the Human N-myristoyltransferases. Cell Chem Biol. 2019 Jun 20;26(6):892-900.e4.

[5] Witwit H, de la Torre J C. Mammarenavirus Z Protein Myristoylation and Oligomerization Are Not Required for Its Dose-Dependent Inhibitory Effect on vRNP Activity. Biochem (Basel). 2025 Jun;5(2):10.

[6] Priyamvada L, Kallemijn W W, Faronato M, et al. Inhibition of vaccinia virus L1 N-myristoylation by the host N-myristoyltransferase inhibitor IMP-1088 generates non-infectious virions defective in cell entry. PLoS Pathog. 2022 Oct 10;18(10):e1010662.

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