

PRODUCT INFORMATION



MRT67307 (hydrochloride)

Item No. 19916

Formal Name: N-[3-[[5-cyclopropyl-2-[[3-(4-morpholinylmethyl)phenyl]amino]-4-pyrimidinyl]amino]propyl]-cyclobutanecarboxamide, hydrochloride

MF: C₂₆H₃₆N₆O₂ • XHCl

FW: 464.6

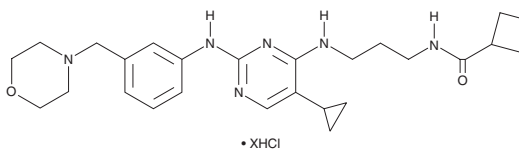
Purity: ≥95%

UV/Vis.: λ_{max}: 271 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

MRT67307 (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the MRT67307 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. MRT67307 (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of MRT67307 (hydrochloride) in these solvents is approximately 2, 3, and 5 mg/ml, respectively.

MRT67307 (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, MRT67307 (hydrochloride) should first be dissolved in DMF and then diluted with the aqueous buffer of choice. MRT67307 (hydrochloride) has a solubility of approximately 0.16 mg/ml in a 1:5 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

MRT67307 is a kinase inhibitor that has been shown to inhibit TBK1, MARK1-4, IKKε, and NUAQ1 (IC₅₀ values are 19, 27-52, 160, and 230 nM, respectively), the salt-inducible kinases (SIKs; IC₅₀s = 250, 67, and 430 nM for SIK1, SIK2, and SIK3, respectively) and ULK1 and ULK2 (IC₅₀s = 45 and 38 nM, respectively).¹⁻⁴ MRT67307 prevents the phosphorylation of IRF3 and the production of IFN-β and increases Toll-like receptor-induced IL-10 and IL-1ra secretion in macrophages.^{1,3} Through its effects on ULK1 and ULK2, MRT67307 blocks autophagy.⁴

References

1. Clark, K., Peggie, M., Plater, L., *et al.* Novel cross-talk within the IKK family controls innate immunity. *Biochem. J.* **434**(1), 93-104 (2011).
2. Clark, K., Takeuchi, O., Akira, S., *et al.* The TRAF-associated protein TANK facilitates cross-talk within the IκappaB kinase family during Toll-like receptor signaling. *Proc. Natl. Acad. Sci. USA* **108**(41), 17093-17098 (2011).
3. Clark, K., MacKenzie, K.F., Petkevicius, K., *et al.* Phosphorylation of CRTC3 by the salt-inducible kinases controls the interconversion of classically activated and regulatory macrophages. *Proc. Natl. Acad. Sci. USA* **109**(42), 16986-16991 (2012).
4. Petherick, K. J., Conway, O.J.L., Mpamhanga, C., *et al.* Pharmacological inhibition of ULK1 kinase blocks mammalian target of rapamycin (mTOR)-dependent autophagy. *J. Biol. Chem.* **290**(18), 28726 (2015).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM