

Product Data Sheet

Product Name: MKI-3
Cat. No.: GC81674

Chemical Properties

Cas. No. 3084702-28-0

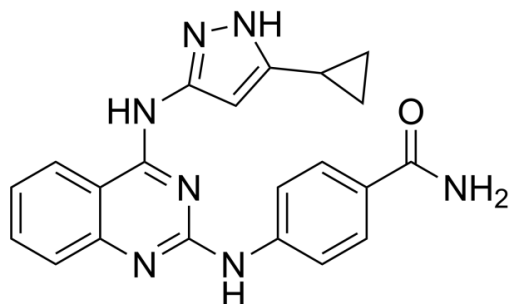
Formula $C_{21}H_{19}N_7O$ M.Wt 385.42

Solubility 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



Background

MKI-3 is a selective microtubule-associated serine/threonine kinase-like (MASTL) inhibitor with an IC_{50} of 5.72 nM and a K_d of 1.89 nM. MKI-3 disrupts the MASTL-ENSA-Aurora A signaling axis. MKI-3 induces chromosomal instability, mitotic catastrophe and apoptosis (apoptosis) in cancer cells. MKI-3 is applicable to research related to triple-negative breast cancer [1].

In Vivo, MKI-3 (8 mg/kg; i.p.; daily; 2 weeks) significantly reduces tumor growth in a 4T1 triple-negative breast cancer mouse model, induces mitotic cell death, and suppresses the MASTL-ENSA-Aurora A signaling pathway [1].

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

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In Vitro, MKI-3 inhibits cellular MASTL activity with an IC₅₀ of 114.9 nM^[1]. MKI-3 (72 h) inhibits proliferation of breast cancer cell lines 4T1, MCF7, MDA-MB-231, and BT549 with IC₅₀ values of 42.01 nM, 93.61 nM, 91.44 nM, and 160.9 nM, respectively^[1]. MKI-3 (250 nM; 12 h) suppresses the MASTL-ENSA-Aurora A signaling axis, inducing apoptotic markers, in BT549 and 4T1 breast cancer cells^[1]. MKI-3 (250 nM; 24 h) activates PP2A in BT549 breast cancer cells^[1]. MKI-3 (250 nM; 24 h) induces mitotic defects including aberrant nuclear morphology, multipolar spindles, and centrosome abnormalities in BT549 breast cancer cells^[1]. MKI-3 (250 nM; 48 h) antiproliferative activity in BT549 breast cancer cells is mediated in part by PP2A activation, as co-treatment with 20 nM okadaic acid rescues cell viability^[1].

References:

[1]. Kim JI, et al. Development of MKI-3: A Potent and Selective MASTL Inhibitor with Improved Efficacy for Cancer Treatment. J Med Chem. Published online March 19, 2026.

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