

Product Data Sheet

Product Name: MKI-2 hydrochloride

Cat. No.: GC81675

Chemical Properties

Cas. No.

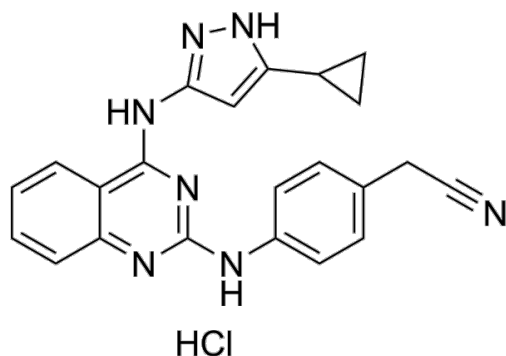
Formula $C_{22}H_{20}ClN_7$ M.Wt 417.89

Solubility DMSO: 100 mg/mL (239.30 mM; Need ultrasonic) Storage Store at -20°C, away from moisture

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-2 hydrochloride is a selective MASTL inhibitor with an IC_{50} of 37.44 nM. MKI-2 hydrochloride induces mitotic catastrophe resulting from the modulation of the MASTL-PP2A axis in breast cancer cells. MKI-2 hydrochloride reduces phospho-ENSA, total, phospho- c-Myc levels. MKI-2 hydrochloride inhibits cancer cells proliferation, migration and induces DNA damage. MKI-2 hydrochloride inhibits germinal vesicle breakdown in mouse oocytes. MKI-2 hydrochloride can be used for the research of cancer, such as breast cancer [1].

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

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In Vitro, MKI-2 hydrochloride potently inhibits recombinant MASTL kinase activity with an IC₅₀ of 37.44 nM^[1]. MKI-2 (14 h) hydrochloride inhibits cellular MASTL activity in MCF7 breast cancer cells with an IC₅₀ of 142.7 nM, as measured by reduced phospho-ENSA levels^[1]. MKI-2 (100 nM) hydrochloride is selective for MASTL, as it does not inhibit recombinant ROCK1, PKAC α , or p70S6K kinases and only slightly inhibits AKT1 at a concentration of 100 nM^[1]. MKI-2 (250 nM; 12-24 h) hydrochloride modulates the MASTL-PP2A-c-Myc axis in MCF7, BT549, and MDA-MB-468 breast cancer cells by increasing PP2A activity, reducing phospho-ENSA and total, phospho-c-Myc levels^[1]. MKI-2 (250 nM; 24 h) hydrochloride induces mitotic catastrophe in MCF7 breast cancer cells at 250 nM for 24 h, as evidenced by mitotic arrest, altered apoptotic and increased DNA damage marker (γ -H2AX) levels, and increased aberrant nuclear cells^[1]. MKI-2 (15.63-1000 nM; 72 h) hydrochloride inhibits the proliferation of MCF7, BT549, MDA-MB-468, and 4T1 breast cancer cells with IC₅₀ values ranging from 56.53 nM to 124.6 nM after 72 h of treatment^[1]. MKI-2 (6.25-25 nM) hydrochloride inhibits colony, 3D spheroid, and mammosphere formation of MCF7 breast cancer cells^[1]. MKI-2 (250 nM; 24 h) hydrochloride inhibits the migration and invasion of BT549 breast cancer cells at 250 nM for 24 h^[1]. MKI-2 (250 nM-2 μ M; 12-48 h) hydrochloride reduces the percentage of GVBD and has no significant effects on mouse oocytes viability^[1].

References:

[1]. Kang M, et al. Discovery and Characterization of a Novel MASTL Inhibitor MKI-2 Targeting MASTL-PP2A in Breast Cancer Cells and Oocytes. Pharmaceuticals (Basel). 2021;14(7):647. Published 2021 Jul 5.

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