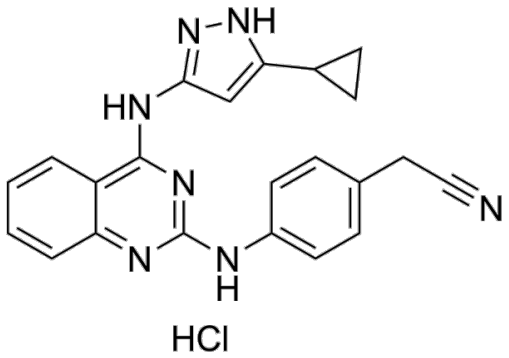
Product Data Sheet

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 inhibts 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 IC_{50} of 37.44 nM[1]. MKI-2 (14 h) hydrochloride inhibits cellular MASTL activity in MCF7 breast cancer cells with an IC_{50} 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, PKACα, 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 IC_{50} 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 μM; 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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