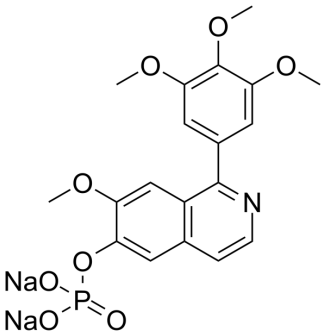
IQTub4P

Cat. No.:	HY-146692
CAS No.:	2376321-67-2
Molecular Formula:	$C_{19}H_{18}NNa_2O_8P$
Molecular Weight:	465.3
Target:	Microtubule/Tubulin
Pathway:	Cell Cycle/DNA Damage; Cytoskeleton
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

IQTub4P is a potent microtubule (MT) inhibitor. IQTub4P has the cytotoxicity in in HeLa cells, with EC_{50} of 170 nM. IQTub4P inhibits microtubule structure and function. IQTub4P is well-tolerated in vivo[1].

In Vitro

IQTub4P (48 h) shows strong dose-dependent cytotoxicity in HeLa cells[1].
IQTub4P (0-750 nM, 15 min) shows dose-dependent microtubule network depolymerisation, leads to mitotic arrests and the formation of aberrant multipolar spindles with resulting unstructured chromosome alignment at 120 nM[1].
IQTub4P (0-1.25 μM, 24 h) shows potent induction of G2/M arrest[1].
IQTub4P (10 μM, 2 min) shows potent inhibition of cellular tubulin polymerisation dynamics[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay

Cell Line:	HeLa cells[1]
Concentration:	
Incubation Time:	48 h
Result:	Showed strong dose-dependent cytotoxicity in HeLa cells, with EC_{50} of 170 nM, and displayed near-identical cytotoxicity in cell culture as its free phenol form IQTub4 (EC_{50} = 120 nM).

Cell Cycle Analysis

Cell Line:	HeLa cells[1]
Concentration:	0, 0.06, 0.12, 0.5, 0.75, 1.25 μM
Incubation Time:	24 h
Result:	Showed potent induction of G2/M arrest, and showed extensive G2/M-arrest from 500 nM.

In Vivo

IQTub4P (Balb/c mice, 25 mg/kg, IP and IV, once every two days, 3 administrations) is well-tolerated in vivo and can avoid short-term cumulative toxicity[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Balb/c mice (female)[1]
Dosage:	25 mg/kg
Administration:	IP and IV, 3 administration, 48 h intervals
Result:	Could avoid short-term cumulative toxicity, and was well-tolerated in vivo, with a single-administration maximal tolerated dose of 32 mg/kg (i.p.) and 50 mg/kg (i.v.).

REFERENCES

[1]. Kraus Y, Glas C, Melzer B, et al. Isoquinoline-based biaryls as a robust scaffold for microtubule inhibitors. Eur J Med Chem. 2020;186:111865.

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