

Product Data Sheet

Product Name: CTX-712
Cat. No.: GC65023

Chemical Properties

Cas. No. 2144751-78-8

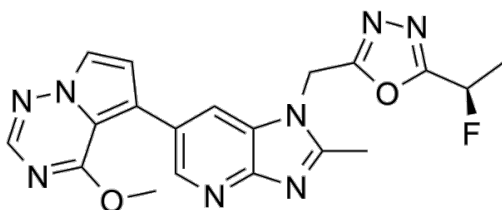
Formula $C_{19}H_{17}FN_8O_2$ M.Wt 408.39

Solubility Storage Store at -20°C, protect from light

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



Protocol

Animal experiment [1]:

Animal models AML/MDS model mice

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

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Preparation Method	Established 13 xenograft tumor (PDX) models derived from cells of myelodysplastic syndrome/acute myeloid leukemia. Further investigated the effect of CTX-712 on tumor growth in vivo, and administered different doses of CTX-712 (6.25, 12.5mg/kg/day) to them. After two weeks of treatment, the tumor volume (in cubic millimeters) was measured, along with the survival rate of the mice.
Dosage form	6.25, 12.5mg/kg/day for 2 weeks; oral
Applications	Among the 5 mice treated with the high-dose regimen (12.5mg/kg), 4 achieved complete remission (the tumors completely shrank to an undetectable size). Two weeks after treatment with CTX-712, the tumor volume of the SRSF2 P95L mutant model mice significantly decreased, and CTX-712 also significantly increased the survival rate of the SRSF2 P95L model mice.

References:

[1] Yoda A, Morishita D, Mizutani A, et al. CTX-712, a Novel Clk inhibitor targeting myeloid neoplasms with SRSF2 mutation[J]. Blood, 2019, 134: 404.

Background

CTX-712 is a potent CDC2 like kinase (CLK) inhibitor with an IC₅₀ value of 1.4nM [1]. CLK is associated with various neurodegenerative diseases, metabolic regulation, and viral infections [2]. CTX-712 can inhibit cancer survival and the growth of cancer cells [3].

In vitro, after 6 hours of treatment with CTX-712 on MOLM13 cells, the phosphorylation levels of SRSF2, SRSF4, and SRSF6 in the cells decreased in a dose-dependent manner, and apoptosis was induced. 72 hours of CTX-712 treatment inhibited the proliferation of acute myeloid leukemia cell lines (U937, THP1, MOLM13), with IC₅₀ values of 71.3±12.5nM, 147±16.1nM, and 35.5±2.3nM, respectively [4]. CTX-712 also inhibited the proliferation of human myeloid K562 and MV-4-11 cells, with IC₅₀ values of 0.15μM and 0.036μM, respectively. The IC₅₀ value of CTX-712 for primary acute myeloid leukemia (AML) cells was 0.078μM, indicating its anti-leukemia effect [3].

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In vivo, oral administration of CTX-712 (6.25-12.5mg/kg/day) for 2 weeks inhibited t inhibits tumor size in mice with myelodysplastic syndrome (MDS) and acute myeloid leukemia (AML), and improves survival rate [3].

References:

- [1] Tang J, Xie Y, Huang J, et al. A critical update on the strategies towards small molecule inhibitors targeting Serine/arginine-rich (SR) proteins and Serine/arginine-rich proteins related kinases in alternative splicing. *Bioorg Med Chem.* 2022;70:116921.
- [2] Qin Z, Qin L, Feng X, Li Z, Bian J. Development of Cdc2-like Kinase 2 Inhibitors: Achievements and Future Directions. *J Med Chem.* 2021 Sep 23;64(18):13191-13211.
- [3] Yoda A, Morishita D, Mizutani A, et al. CTX-712, a Novel Clk inhibitor targeting myeloid neoplasms with SRSF2 mutation[J]. *Blood*, 2019, 134: 404.
- [4] Yang H, Fang Z, Wei Y, et al. CDC2-like Kinases (CLKs) Inhibition As a Novel Targeted Therapeutic Strategy in Myelodysplastic Syndromes (MDS)[J]. *Blood*, 2024, 144: 6691.

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