TAK-659 hydrochloride

Cat. No.: HY-100867A
CAS No.: 1952251-28-3
Molecular Formula: C₁₇H₂₂ClFN₆O
Molecular Weight: 380.85
Target: Syk; FLT3
Pathway: Protein Tyrosine Kinase/RTK
Storage: 4°C, stored under nitrogen
* In solvent: -80°C, 6 months; -20°C, 1 month (stored under nitrogen)

SOLVENT & SOLUBILITY

In Vitro
H₂O : 2 mg/mL (5.25 mM; ultrasonic and adjust pH to 3 with HCl)
DMSO : < 1 mg/mL (insoluble or slightly soluble)

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
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</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>2.6257 mL</td>
<td>13.1285 mL</td>
<td>26.2571 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.5251 mL</td>
<td>2.6257 mL</td>
<td>5.2514 mL</td>
</tr>
<tr>
<td>10 mM</td>
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Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description
TAK-659 hydrochloride is a highly potent, selective, reversible and orally available dual inhibitor of spleen tyrosine kinase (SYK) and fms related tyrosine kinase 3 (FLT3), with an IC₅₀ of 3.2 nM and 4.6 nM for SYK and FLT3, respectively. TAK-659 hydrochloride induces cell death in tumor cells but not in nontumor cells, and with potential for the treatment of chronic lymphocytic leukemia (CLL)[1][2][3][4].

IC₅₀ & Target
IC₅₀: 3.2 nM (Syk), 4.6 nM (FLT3)[1]

In Vitro
TAK-659 hydrochloride inhibits cellular proliferation in SYK-dependent DLBCL and FLT3-dependent AML cell lines[1][3]. TAK-659 hydrochloride (5 µM; 1-24 hours) induces Casp3 activation in the LMP2A/MYC cells which was readily apparent at 4 h and reached maximum levels at 8 h of treatment[4]. TAK-659 hydrochloride (0.01-10 µM; 1 hour) stimulates expression of phospho-Syk at Tyr525 and Tyr352 and phospho-ERK1/2 increased in Ramos cells[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Apoptosis Analysis[4]
**Cell Line:** LMP2A/MYC cells  
**Concentration:** 5 µM  
**Incubation Time:** 1 hour, 2 hours, 4 hours, 8 hours, 24 hours  
**Result:** Induced apoptosis in LMP2A/MYC lymphoma cells.

**Western Blot Analysis**[^2]

**Cell Line:** Ramos cells  
**Concentration:** 0.01 µM, 0.1 µM, 1 µM, 10 µM  
**Incubation Time:** 1 hour  
**Result:** Enhanced expression of phospho-Syk at Tyr525 and Tyr352 and phospho-ERK1/2 in stimulated Ramos cells.

**In Vivo**

TAK-659 hydrochloride (100 mg/kg/day; p.o.; daily, for 10 days) treatment totally abrogates splenomegaly and tumor development in LMP2A/MYC mice in both pretumor and tumor cell transfer experiments[^4]. TAK-659 hydrochloride treatment kills tumor cells, but not host cells within the spleen and tumors[^4]. TAK-659 hydrochloride treatment abrogates metastasis of tumor cells into bone marrow[^4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**Animal Model:** LMP2A/MYC double transgenic mice[^4]  
**Dosage:** 100 mg/kg/day  
**Administration:** Oral gavage; for 10 days  
**Result:** Inhibited LMP2A-induced tumor cell survival in vivo.

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**REFERENCES**


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