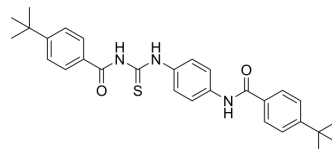


Antiviral agent 34

Cat. No.:	HY-155110
CAS No.:	945152-88-5
Molecular Formula:	C ₂₉ H ₃₃ N ₃ O ₂ S
Molecular Weight:	487.66
Target:	Influenza Virus
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Antiviral agent 34 is a potent and orally active antiviral agent against influenza A and B subtypes with an EC ₅₀ value of 0.8 nM for H1N1 proliferation. Antiviral agent 34 derivatives inhibited influenza virus proliferation by targeting influenza virus RNA-dependent RNA polymerase. Antiviral agent 34 can be used for influenza virus research ^[1] .																								
In Vitro	<p>Antiviral agent 34 (Compound 10m) (0-470 nM, 24 h) demonstrates a high safety profile and inhibits the H1N1 virus proliferation^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>MDCK cells</td> </tr> <tr> <td>Concentration:</td> <td>0-470 nM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Exhibited low toxicity to MDCK cells.</td> </tr> </table> <p>Western Blot Analysis^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>MDCK cells</td> </tr> <tr> <td>Concentration:</td> <td>2-125 nM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Reduced the protein level of H1N1 nucleocapsid protein (NP) with low nanomolar values.</td> </tr> </table> <p>Real Time qPCR^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>MDCK cells</td> </tr> <tr> <td>Concentration:</td> <td>2-31.3 nM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Reduced the mRNA level of H1N1 nucleocapsid protein (NP) with low nanomolar values.</td> </tr> </table>	Cell Line:	MDCK cells	Concentration:	0-470 nM	Incubation Time:	24 h	Result:	Exhibited low toxicity to MDCK cells.	Cell Line:	MDCK cells	Concentration:	2-125 nM	Incubation Time:	24 h	Result:	Reduced the protein level of H1N1 nucleocapsid protein (NP) with low nanomolar values.	Cell Line:	MDCK cells	Concentration:	2-31.3 nM	Incubation Time:	24 h	Result:	Reduced the mRNA level of H1N1 nucleocapsid protein (NP) with low nanomolar values.
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In Vivo

Antiviral agent 34 (Compound 10m) (1 g/kg for orally administration, three times a day and continues for 14 days) exhibits antiviral activity in a lethal influenza virus mouse model^[1].

Pharmacokinetic Analysis in SD rats ^[1]

Route	Dose (mg/kg)	AUC _{last} (ng•h/mL)	AUC _{INF_obs} (ng•h/mL)	t _{1/2} (h)	T _{max} (h)	C _{max} (ng/mL)	Cl _{obs} (L•h/kg)	V _{ss_obs} (mL/kg)	MRT _{INF_obs} (h)	F (%)
i.v.	3	21944	21920	3.69	0.08	41942	2.29	/	/	/
p.o.	10	5416	5395	3.26	4.0d	1184	/	/	/	7.38

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model: BALB/c mice ^[1]

Dosage: 1 g/kg/d continues for 14 days

Administration: Oral gavage (p.o.)

Result: Tolerated at a dose of 1 g/kg with low acute toxicity.
Provided ~ 50% protection in mice infected with lethal-dose H1N1.

Animal Model: SD rats (Pharmacokinetic assay)^[1]

Dosage: 3 mg/kg, 10 mg/kg

Administration: intravenous injection (i.v.), oral administration (p.o.)

Result: Had preferable AUC value and low clearance rate and displayed superior oral bioavailability (F = 7.38%).

REFERENCES

[1]. Liu X, et al. Rational design and optimization of acylthioureas as novel potent influenza virus non-nucleoside polymerase inhibitors. Eur J Med Chem. 2023 Nov 5;259:115678.

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

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