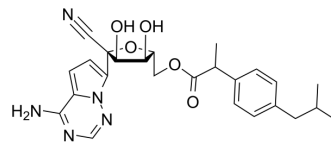


## ATV041

<b>Cat. No.:</b>	HY-152535
<b>CAS No.:</b>	2935937-67-8
<b>Molecular Formula:</b>	C <sub>25</sub> H <sub>29</sub> N <sub>5</sub> O <sub>5</sub>
<b>Molecular Weight:</b>	479.53
<b>Target:</b>	Others
<b>Pathway:</b>	Others
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	ATV041 is an orally active Ibuprofen (HY-78131) and nucleotide analogue. ATV041 improves oral pharmacokinetic (PK) profile and tissue distribution with anti-mouse hepatitis virus (MHV) activity. ATV041 reduces viral load, tissue damage and virus-induced inflammation in a dose-dependent manner <sup>[1]</sup> .																																																					
<b>IC<sub>50</sub> &amp; Target</b>	Mouse hepatitis virus (MHV) <sup>[1]</sup>																																																					
<b>In Vitro</b>	ATV041 inhibits CCoV, FIPV and TGEV with EC <sub>50</sub> values of 1.406 μM, 7.34 μM and 3.777 μM, respectively <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.																																																					
<b>In Vivo</b>	<p>ATV041 (200 mg/kg; p.o.; single dose) is widely and rapidly distributes in plasma, liver, lung and kidney tissues<sup>[1]</sup>.            ATV041 (10, 50 and 200 mg/kg; p.o.; single dose) inhibits virus replication in liver and lung in a dose-dependent manner.            ATV041 down-regulates the expression of TNF-α, IL-1β, IL-6, IFN-γ and CXCL10 inflammatory factors and improves tissue damage<sup>[1]</sup>.</p> <p>Pharmacokinetic (PK) parameters of GS-441524 and Ibuprofen in SD rats<sup>[1]</sup>            (GS-441524 and Ibuprofen are produced by hydrolysis of ATV041)</p> <table border="1"> <thead> <tr> <th>Analytes</th> <th>Route</th> <th>Dose (mg/kg)</th> <th>T<sub>1/2</sub> (h)</th> <th>T<sub>max</sub> (h)</th> <th>C<sub>max</sub> (μM/L)</th> <th>AUC<sub>0-∞</sub> (h•μM/L)</th> <th>MRT<sub>0-∞</sub> (h)</th> <th>F (%)</th> </tr> </thead> <tbody> <tr> <td>GS-441524</td> <td>p.o.</td> <td>25.0</td> <td>4.98±3.57</td> <td>0.67±0.29</td> <td>7.75±1.58</td> <td>22.6±2.34</td> <td>3.16±1.21</td> <td>60.31±0.06</td> </tr> <tr> <td>GS-441524</td> <td>i.v.</td> <td>5.0</td> <td>2.81±3.28</td> <td>0.08±0.00</td> <td>5.67±0.57</td> <td>7.51±0.85</td> <td>1.28±0.139</td> <td>-</td> </tr> <tr> <td>Ibuprofen</td> <td>p.o.</td> <td>25.0</td> <td>2.63±1.78</td> <td>0.67±0.29</td> <td>80.2±12</td> <td>263±37</td> <td>3.35±0.925</td> <td>78.42±0.11</td> </tr> <tr> <td>Ibuprofen</td> <td>i.v.</td> <td>5.0</td> <td>1.58±0.82</td> <td>0.03±0.00</td> <td>41.8±3.12</td> <td>67.1±4.39</td> <td>1.57±0.294</td> <td>-</td> </tr> </tbody> </table> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>									Analytes	Route	Dose (mg/kg)	T <sub>1/2</sub> (h)	T <sub>max</sub> (h)	C <sub>max</sub> (μM/L)	AUC <sub>0-∞</sub> (h•μM/L)	MRT <sub>0-∞</sub> (h)	F (%)	GS-441524	p.o.	25.0	4.98±3.57	0.67±0.29	7.75±1.58	22.6±2.34	3.16±1.21	60.31±0.06	GS-441524	i.v.	5.0	2.81±3.28	0.08±0.00	5.67±0.57	7.51±0.85	1.28±0.139	-	Ibuprofen	p.o.	25.0	2.63±1.78	0.67±0.29	80.2±12	263±37	3.35±0.925	78.42±0.11	Ibuprofen	i.v.	5.0	1.58±0.82	0.03±0.00	41.8±3.12	67.1±4.39	1.57±0.294	-
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Dosage:	5 or 25 mg/kg.
Administration:	Oral gavage or intravenous injection; single dose.
Result:	Showed an oral activity and efficacy.
Animal Model:	BALB/c mice <sup>[1]</sup> .
Dosage:	10, 50 and 200 mg/kg.
Administration:	Oral gavage; single dose.
Result:	Improved tissue distribution and reduced viral load, tissue damage, virus-induced inflammation.

## REFERENCES

[1]. Zhou Q, et al. Nonsteroidal anti-inflammatory drugs (NSAIDs) and nucleotide analog GS-441524 conjugates with potent in vivo efficacy against coronaviruses. Eur J Med Chem. 2023 Jan 10;249:115113.

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

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