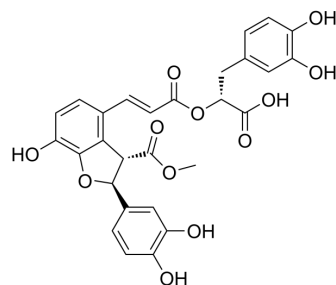


## Monomethyl lithospermate

<b>Cat. No.:</b>	HY-N8931
<b>CAS No.:</b>	933054-33-2
<b>Molecular Formula:</b>	C <sub>28</sub> H <sub>24</sub> O <sub>12</sub>
<b>Molecular Weight:</b>	552.48
<b>Target:</b>	Akt
<b>Pathway:</b>	PI3K/Akt/mTOR
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	<p>Monomethyl lithospermate activates the PI3K/AKT pathway, which plays a protective role in nerve injury. Monomethyl lithospermate can improve the survival ability of SHSY-5Y cells, inhibit the breakdown of mitochondrial membrane potential (MMOP) and inhibit cell apoptosis. Monomethyl lithospermate also reduced the level of oxidative stress in the brain tissue of rats with middle artery occlusion (MCAO) and improved nerve damage in rats with ischemic stroke (IS)<sup>[1]</sup>.</p>								
<b>In Vitro</b>	<p>Monomethyl lithospermate (5, 10, and 20 μM; 12 h) increases cell viability of SHSY-5Y cells treated by oxygen and glucose deprivation/Reoxygenation (OGD/R)<sup>[1]</sup>.</p> <p>Monomethyl lithospermate (20 μM; 12 h) alleviates cell damage, mitochondrial membrane potential loss and apoptosis of SHSY-5Y cells after oxygen and glucose deprivation/reoxygenation<sup>[1]</sup>.</p> <p>Monomethyl lithospermate (5, 10, and 20 μM; 12 h) reduces ROS and intracellular oxidative stress in SHSY-5Y cells<sup>[1]</sup>.</p> <p>Monomethyl lithospermate (20 μM; 12 h) activates PI3K/AKT in SHSY-5Y cells<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Immunofluorescence<sup>[1]</sup></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Cell Line:</td> <td>SHSY-5Y cells</td> </tr> <tr> <td>Concentration:</td> <td>5, 10, and 20 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>12 hours</td> </tr> <tr> <td>Result:</td> <td>Inhibited the mitochondrial membrane potential (MMOP) collapse and apoptosis of SHSY-5Y cells induced by oxygen and glucose deprivation/Reoxygenation (OGD/R) treatment.</td> </tr> </table>	Cell Line:	SHSY-5Y cells	Concentration:	5, 10, and 20 μM	Incubation Time:	12 hours	Result:	Inhibited the mitochondrial membrane potential (MMOP) collapse and apoptosis of SHSY-5Y cells induced by oxygen and glucose deprivation/Reoxygenation (OGD/R) treatment.
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<b>In Vivo</b>	<p>Monomethyl lithospermate (72.4 μM/kg; p.o.; once daily for 14 d) improves the neurological function of middle artery occlusion (MCAO) rats 24 h after ischemia reperfusion (IR), and reduces the size of cerebral infarction; also reduces the level of oxidative stress and inhibit neuronal apoptosis in MCAO rats<sup>[1]</sup>.</p> <p>Monomethyl lithospermate can reduce the oxidative stress level and inhibit neuronal apoptosis in MCAO rats<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>								

### REFERENCES

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[1]. Yang F, et al. Monomethyl lithospermate alleviates ischemic stroke injury in middle cerebral artery occlusion mice in vivo and protects oxygen glucose deprivation/reoxygenation induced SHSY-5Y cells in vitro via activation of PI3K/Akt signaling. Front Pharmacol. 2022 Oct 13;13:1024439.

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

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