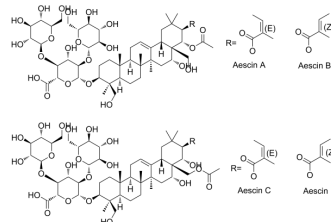


## Escin

<b>Cat. No.:</b>	HY-B2114
<b>CAS No.:</b>	6805-41-0
<b>Molecular Formula:</b>	C <sub>55</sub> H <sub>86</sub> O <sub>24</sub>
<b>Molecular Weight:</b>	1131.25
<b>Target:</b>	Apoptosis
<b>Pathway:</b>	Apoptosis
<b>Storage:</b>	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 1.92 mg/mL (1.70 mM; ultrasonic and warming and heat to 60°C)					
	H <sub>2</sub> O : < 0.1 mg/mL (insoluble)					
	<b>Preparing Stock Solutions</b>	<b>Solvent</b>	<b>Mass</b>	<b>1 mg</b>	<b>5 mg</b>	<b>10 mg</b>
		<b>Concentration</b>				
		<b>1 mM</b>		0.8840 mL	4.4199 mL	8.8398 mL
<b>5 mM</b>			---	---	---	
	<b>10 mM</b>		---	---	---	
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (2.21 mM); Clear solution					
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (2.21 mM); Clear solution					
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (2.21 mM); Clear solution					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Escin, a natural compound of triterpenoid saponins that can be isolated from horse chestnut ( <i>Aesculus hippocastanum</i> ) seeds, can be used as a vasoprotective anti-inflammatory, anti-edematous and anti-nociceptive agent <sup>[1]</sup> .
<b>In Vitro</b>	Escin (1 μM, 0-5 h) stimulates phosphorylation of the GR in CFTL-12 murine mast cells <sup>[1]</sup> . Escin (0.1-1 μg/mL, 24 h) protects cells from OGD/R and rt-PA stimulated cell damage in bEnd.3 cells <sup>[2]</sup> . Escin (0-100 μg/mL, 12-48 h) induces cell cycle arrest and apoptosis, and inhibits tumor cell proliferation in HCT116 and HCT8 cells <sup>[5]</sup> . Escin (0-80 μg/mL, 12-24 h) induces DNA damage, and upregulates p-ATM and γH2AX in HCT116 and HCT8 cells <sup>[5]</sup> .

Escin (0-50  $\mu$ M, 24 h) decreases mitochondrial membrane potential and induces cytochrome C release via generation of ROS, and induces apoptosis of bladder cancer cells (T24 and J82 cells)<sup>[6]</sup>.

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

#### Western Blot Analysis<sup>[2]</sup>

Cell Line:	OGD/R and rt-PA stimulated bEnd.3 cells
Concentration:	0.1, 0.5 and 1 $\mu$ g/mL
Incubation Time:	24 h
Result:	Upregulated the expression of ZO-1 and Occludin.

#### In Vivo

Escin (1-5 mg/kg, p.o.) inhibits the allergic skin response in Porcine induced by Compound 48/80 (HY-115768)<sup>[1]</sup>.

Escin (0.5 and 1 mg/kg, i.v.) attenuates recombinant tissue plasminogen activator (rt-PA) induced hemorrhagic transformation (HT) in mice<sup>[2]</sup>.

Escin (10 mg/kg, p.o., 4 days) shows antioxidant, anti-inflammatory, antinecrotic, and anti-apoptotic effects against Con A-induced immune-mediated hepatitis in mice<sup>[3]</sup>.

Escin (5-20 mg/kg, p.o., once a day, after 6 weeks of diabetes induction, for next 4 weeks) alleviates peripheral neuropathy in Streptozotocin (HY-13753) induced diabetes in rats<sup>[4]</sup>.

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

Animal Model:	Con A-induced immune-mediated hepatitis mice <sup>[3]</sup>
Dosage:	10 mg/kg
Administration:	p.o., 4 days
Result:	Decreased the peak activities of ALT ( $p < 0.01$ ), AST ( $p < 0.001$ ), and LDH. Ameliorated hepatic pathological abnormalities. Limited Con A-induced elevation in Ly6G-positive cell in liver.

## CUSTOMER VALIDATION

- SSRN. 21 Nov 2022.

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## REFERENCES

- [1]. Sun X, et al. Escin avoids hemorrhagic transformation in ischemic stroke by protecting BBB through the AMPK/Cav-1/MMP-9 pathway. *Phytomedicine*. 2023 Nov;120:155071.
- [2]. Elshal M, Hazem SH. Escin suppresses immune cell infiltration and selectively modulates Nrf2/HO-1, TNF- $\alpha$ /JNK, and IL-22/STAT3 signaling pathways in concanavalin A-induced autoimmune hepatitis in mice. *Inflammopharmacology*. 2022 Dec;30(6):2317-2329.
- [3]. Suryavanshi SV, Kulkarni YA. Escin alleviates peripheral neuropathy in streptozotocin induced diabetes in rats. *Life Sci*. 2020 Aug 1;254:117777.
- [4]. Wang Z, et al. Escin-induced DNA damage promotes escin-induced apoptosis in human colorectal cancer cells via p62 regulation of the ATM/ $\gamma$ H2AX pathway. *Acta Pharmacol Sin*. 2018 Oct;39(10):1645-1660.
- [5]. Cheng CL, et al. Escin induces apoptosis in human bladder cancer cells: An in vitro and in vivo study. *Eur J Pharmacol*. 2018 Dec 5;840:79-88.

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

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