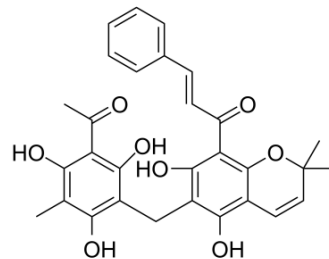


Rottlerin

Cat. No.:	HY-18980												
CAS No.:	82-08-6												
Molecular Formula:	C ₃₀ H ₂₈ O ₈												
Molecular Weight:	516.54												
Target:	PKC; Autophagy; Apoptosis; HIV												
Pathway:	Epigenetics; TGF-beta/Smad; Autophagy; Apoptosis; Anti-infection												
Storage:	<table border="0"> <tr> <td>Powder</td> <td>-20°C</td> <td>3 years</td> </tr> <tr> <td></td> <td>4°C</td> <td>2 years</td> </tr> <tr> <td>In solvent</td> <td>-80°C</td> <td>6 months</td> </tr> <tr> <td></td> <td>-20°C</td> <td>1 month</td> </tr> </table>	Powder	-20°C	3 years		4°C	2 years	In solvent	-80°C	6 months		-20°C	1 month
Powder	-20°C	3 years											
	4°C	2 years											
In solvent	-80°C	6 months											
	-20°C	1 month											



SOLVENT & SOLUBILITY

In Vitro	DMSO : 2 mg/mL (3.87 mM); Need ultrasonic)			
		Solvent Concentration	Mass	
			1 mg	5 mg
	Preparing Stock Solutions	1 mM	1.9360 mL	9.6798 mL
		5 mM	---	
		10 mM	---	
Please refer to the solubility information to select the appropriate solvent.				
In Vivo	1. Add each solvent one by one: 0.5% CMC-Na/saline water Solubility: 22 mg/mL (42.59 mM); Suspended solution; Need ultrasonic			

BIOLOGICAL ACTIVITY

Description	Rottlerin, a natural product purified from <i>Mallotus Philippinensis</i> , is a specific PKC inhibitor, with IC ₅₀ values for PKCδ of 3-6 μM, PKCα,β,γ of 30-42 μM, PKCε,η,ζ of 80-100 μM. Rottlerin acts as a direct mitochondrial uncoupler, and stimulates autophagy by targeting a signaling cascade upstream of mTORC1. Rottlerin induces apoptosis via caspase 3 activation ^{[1][2]} ^[3] . Rottlerin inhibits HIV-1 integration and Rabies virus (RABV) infection ^{[4][5]} .			
IC₅₀ & Target	PKCδ 3 μM (IC ₅₀ , Porcine spleen)	PKCα 30 μM (IC ₅₀ , baculovirus-infected Sf9 insect cells)	PKCγ 40 μM (IC ₅₀ , baculovirus-infected Sf9 insect cells)	PKCβ 42 μM (IC ₅₀ , baculovirus-infected Sf9 insect cells)
	PKCη 82 μM (IC ₅₀ , baculovirus-infected Sf9 insect cells)	PKCζ 100 μM (IC ₅₀ , baculovirus-infected Sf9 insect cells)	PKCε 100 μM (IC ₅₀ , baculovirus-infected Sf9 insect cells)	CaM kinase III 5.3 μM (IC ₅₀ , EF-2 kinase activity in cytosol of

				murine pancreas)																
	CKII 30 μ M (IC ₅₀ , holoenzyme expressed in E.coli)	PKA 78 μ M (IC ₅₀ , catalytic subunit from porcine heart)	HIV-1																	
In Vitro	<p>Rottlerin (20 μM, 2/6/24 hours) dramatically decreases the cyclin D-1 mRNA levels in a time-dependent manner in primary HMVEC^[2].</p> <p>Rottlerin (20 μM) exhibits cell proliferation in HMVEC^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Primary HMVEC (Human Microvascular Endothelial Cell).</td> </tr> <tr> <td>Concentration:</td> <td>20 μM.</td> </tr> <tr> <td>Incubation Time:</td> <td>2, 6, 24 hours.</td> </tr> <tr> <td>Result:</td> <td>Dramatically decreased the cyclin D-1 mRNA levels in a time-dependent manner. After 2 h of treatment, the mRNA level was reduced to 50% of the control, to circa 40% after 6 h, and to 20% after 24 h. Consistently, a similar trend was observed in the protein levels, where the decrease was circa 50% after 2 h, 80% after 6 h, and to almost undetectable levels after 24 h.</td> </tr> </table> <p>Cell Proliferation Assay^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Primary HMVEC (Human Microvascular Endothelial Cell).</td> </tr> <tr> <td>Concentration:</td> <td>20 μM.</td> </tr> <tr> <td>Incubation Time:</td> <td>24/48 hours.</td> </tr> <tr> <td>Result:</td> <td>Exhibited a strong growth inhibition, with a reduction in thymidine incorporation respect to the control cells (DMSO 0.1%) of circa 75% and 80%, respectively.</td> </tr> </table>				Cell Line:	Primary HMVEC (Human Microvascular Endothelial Cell).	Concentration:	20 μ M.	Incubation Time:	2, 6, 24 hours.	Result:	Dramatically decreased the cyclin D-1 mRNA levels in a time-dependent manner. After 2 h of treatment, the mRNA level was reduced to 50% of the control, to circa 40% after 6 h, and to 20% after 24 h. Consistently, a similar trend was observed in the protein levels, where the decrease was circa 50% after 2 h, 80% after 6 h, and to almost undetectable levels after 24 h.	Cell Line:	Primary HMVEC (Human Microvascular Endothelial Cell).	Concentration:	20 μ M.	Incubation Time:	24/48 hours.	Result:	Exhibited a strong growth inhibition, with a reduction in thymidine incorporation respect to the control cells (DMSO 0.1%) of circa 75% and 80%, respectively.
	Cell Line:	Primary HMVEC (Human Microvascular Endothelial Cell).																		
Concentration:	20 μ M.																			
Incubation Time:	2, 6, 24 hours.																			
Result:	Dramatically decreased the cyclin D-1 mRNA levels in a time-dependent manner. After 2 h of treatment, the mRNA level was reduced to 50% of the control, to circa 40% after 6 h, and to 20% after 24 h. Consistently, a similar trend was observed in the protein levels, where the decrease was circa 50% after 2 h, 80% after 6 h, and to almost undetectable levels after 24 h.																			
Cell Line:	Primary HMVEC (Human Microvascular Endothelial Cell).																			
Concentration:	20 μ M.																			
Incubation Time:	24/48 hours.																			
Result:	Exhibited a strong growth inhibition, with a reduction in thymidine incorporation respect to the control cells (DMSO 0.1%) of circa 75% and 80%, respectively.																			
In Vivo	<p>Rottlerin (20 mg/kg, gavage 5 days per week, once daily, for 6 weeks) inhibits AsPC-1 pancreatic tumor growth in Balb C nude mice with no toxicity^[3].</p> <p>Rottlerin inhibits tumor cell proliferation, and induces apoptosis through activation of caspase-3 and cleavage of poly(ADP-ribose) polymerase (PARP)^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td> <td>Balb C nude mice (4-6 weeks old) with AsPC-1 cells (2\times10⁶ cells mixed with Matrigel, 50:50 ratio) injection^[3].</td> </tr> <tr> <td>Dosage:</td> <td>0 or 20 mg/kg.</td> </tr> <tr> <td>Administration:</td> <td>Gavage 5 days per week, once daily, for 6 weeks.</td> </tr> <tr> <td>Result:</td> <td>Inhibited AsPC-1 pancreatic tumor growth in Balb C nude mice and had no effect on the body weight of AsPC-1 tumor-bearing mice.</td> </tr> </table>				Animal Model:	Balb C nude mice (4-6 weeks old) with AsPC-1 cells (2 \times 10 ⁶ cells mixed with Matrigel, 50:50 ratio) injection ^[3] .	Dosage:	0 or 20 mg/kg.	Administration:	Gavage 5 days per week, once daily, for 6 weeks.	Result:	Inhibited AsPC-1 pancreatic tumor growth in Balb C nude mice and had no effect on the body weight of AsPC-1 tumor-bearing mice.								
Animal Model:	Balb C nude mice (4-6 weeks old) with AsPC-1 cells (2 \times 10 ⁶ cells mixed with Matrigel, 50:50 ratio) injection ^[3] .																			
Dosage:	0 or 20 mg/kg.																			
Administration:	Gavage 5 days per week, once daily, for 6 weeks.																			
Result:	Inhibited AsPC-1 pancreatic tumor growth in Balb C nude mice and had no effect on the body weight of AsPC-1 tumor-bearing mice.																			

REFERENCES

-
- [1]. Gschwendt M, et al. Rottlerin, a novel protein kinase inhibitor. *Biochem Biophys Res Commun.* 1994 Feb 28;199(1):93-8.
- [2]. Valacchi G, et al. Rottlerin exhibits antiangiogenic effects in vitro. *Chem Biol Drug Des.* 2011 Jun;77(6):460-70.
- [3]. Minzhao Huang, et al. Rottlerin suppresses growth of human pancreatic tumors in nude mice, and pancreatic cancer cells isolated from KrasG12D mice. *Cancer Letters* 353 (2014) 32-40.
- [4]. María Rosa López-Huertas, et al. Protein kinase C θ is a specific target for inhibition of the HIV type 1 replication in CD4+ T lymphocytes. *J Biol Chem.* 2011 Aug 5;286(31):27363-77.
- [5]. Zoé Lama, et al. Kinase inhibitors tyrphostin 9 and rottlerin block early steps of rabies virus cycle. *Antiviral Res.* 2019 Aug;168:51-60.
-

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