



# SZABO SCANDIC

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Laborgeräte & Service

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### Zuschläge

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### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

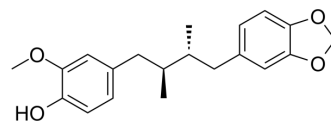
[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

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## Macelignan

<b>Cat. No.:</b>	HY-N0064		
<b>CAS No.:</b>	107534-93-0		
<b>Molecular Formula:</b>	C <sub>20</sub> H <sub>24</sub> O <sub>4</sub>		
<b>Molecular Weight:</b>	328.4		
<b>Target:</b>	COX		
<b>Pathway:</b>	Immunology/Inflammation		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 100 mg/mL (304.51 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	<b>Preparing Stock Solutions</b>	1 mM	3.0451 mL	15.2253 mL	30.4507 mL
		5 mM	0.6090 mL	3.0451 mL	6.0901 mL
10 mM		0.3045 mL	1.5225 mL	3.0451 mL	
Please refer to the solubility information to select the appropriate solvent.					
<b>In Vivo</b>	<ol style="list-style-type: none"> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2.5 mg/mL (7.61 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (7.61 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 2.5 mg/mL (7.61 mM); Clear solution</li> </ol>				

### BIOLOGICAL ACTIVITY

<b>Description</b>	Macelignan ((+)-Anwulignan; Anwuligan) is an orally active lignan isolated from Myristica fragrans. Macelignan possesses many pharmacological activities, including anti-inflammatory, anti-cancer, anti-diabetes, and neuroprotective activities <sup>[1][2][3]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	COX-2
<b>In Vitro</b>	Macelignan (1-50 μM; 72 hours) does not reduce cell viability alone, however, UVB treatment, even at the lowest dose of 30

mJ/cm<sup>2</sup>, reduces HaCaT cell viability in a dose-dependent manner, it reduces approximately 80% of control values at 100 μM in HaCaT cells<sup>[1]</sup>.

Macelignan (0.1-1 μM; 24 hours) decreases COX-2 expression in a concentration-dependent manner, and at the highest concentration of macelignan (1 μM), COX-2 expression is inhibited by almost 50% in HaCaT cells<sup>[1]</sup>.

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

#### Cell Viability Assay<sup>[1]</sup>

Cell Line:	HaCaT cells
Concentration:	1 μM; 2.5 μM; 5 μM; 10 μM; 15 μM; 50 μM
Incubation Time:	72 hours
Result:	Induced cell death by UVB irradiation at 30 mJ/cm <sup>2</sup> from 10 μM.

#### Western Blot Analysis<sup>[1]</sup>

Cell Line:	HaCaT cells
Concentration:	0.1 μM; 0.5 μM; 1 μM
Incubation Time:	24 hours
Result:	Reduced UVB-induced COX-2 expression in cells.

#### In Vivo

Macelignan (oral administration; 15 mg/kg; every day for three weeks) exhibits in vivo anti-diabetic effects. The baseline (day 0) fasting blood glucose levels does not differ between groups; at the end of the experiment, the values of the Macelignan-treated group are significantly lower compared to the diabetic control group in C57BL/KsJ-db/db mice<sup>[2]</sup>.

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

Animal Model:	Male C57BL/KsJ-db/db mice <sup>[2]</sup>
Dosage:	15 mg/kg
Administration:	Oral administration; 15 mg/kg; every day for three weeks
Result:	Significantly reduced the blood glucose levels in mice.

## CUSTOMER VALIDATION

- Phytomedicine. 2023 Oct 13, 155144.
- Biochem Biophys Res Commun. 2020 Jan 22;521(4):1070-1076.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

[1]. Anggakusuma, et al. Effects of macelignan isolated from *Myristica fragrans* Houtt. on UVB-induced matrix metalloproteinase-9 and cyclooxygenase-2 in HaCaT cells. *J Dermatol Sci*

[2]. Jiyoung Yeo, et al. Effects of a multi-herbal extract on type 2 diabetes. *Chin Med*. 2011 Mar 4;6:10.

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[3]. Chun-Ai Cui, et al. Macelignan attenuates LPS-induced inflammation and reduces LPS-induced spatial learning impairments in rats. *Neurosci Lett*. 2008 Dec 19;448(1):110-4.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA