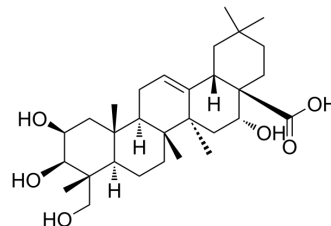


## Polygalacic acid

<b>Cat. No.:</b>	HY-N0801
<b>CAS No.:</b>	22338-71-2
<b>Molecular Formula:</b>	C <sub>30</sub> H <sub>48</sub> O <sub>6</sub>
<b>Molecular Weight:</b>	504.7
<b>Target:</b>	MMP; Cholinesterase (ChE)
<b>Pathway:</b>	Metabolic Enzyme/Protease; Neuronal Signaling
<b>Storage:</b>	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 50 mg/mL (99.07 mM; Need ultrasonic)

Concentration	Mass			
	1 mg	5 mg	10 mg	
1 mM	1.9814 mL	9.9069 mL	19.8138 mL	
5 mM	0.3963 mL	1.9814 mL	3.9628 mL	
10 mM	0.1981 mL	0.9907 mL	1.9814 mL	

Please refer to the solubility information to select the appropriate solvent.

### BIOLOGICAL ACTIVITY

#### Description

Polygalacic acid, is a triterpene, isolated from the root of *Polygala tenuifolia* Willd. Polygalacic acid inhibits MMP expression. Polygalacic acid may have a therapeutic effect in Osteoarthritis (OA) treatment<sup>[1]</sup>. Polygalacic acid exerts a significant neuroprotective effect on cognitive impairment, PA improves cholinergic system reactivity by inhibiting acetylcholinesterase (AChE) activity, increasing choline acetyltransferase (ChAT) activity, and elevating levels of acetylcholine (ACh) in the hippocampus and frontal cortex<sup>[2]</sup>.

#### IC<sub>50</sub> & Target

AChE

#### In Vitro

Polygalacic acid (0-100 μM; 24 hours) significantly decreases the mRNA expressions of MMP-3, MMP-9, MMP-13, and COX-2, which are significantly increased by IL-1β, in a dose-dependent manner<sup>[1]</sup>. Polygalacic acid (0-100 μM; 6 hours) decreases the expression of phosphor-p38, phosphor-Erk, and phosphor-Jnk induced by IL-1β, phosphor-p65 is not reduced by polygalacic acid<sup>[1]</sup>.

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

RT-PCR<sup>[1]</sup>

Cell Line: Chondrocyte cells

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Concentration:	50 $\mu$ M; 100 $\mu$ M
Incubation Time:	24 hours
Result:	Suppressed IL-1 $\beta$ -induced COX-2, MMP3, MMP9, and MMP13 mRNA expression.

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

Cell Line:	Chondrocyte cells
Concentration:	50 $\mu$ M; 100 $\mu$ M
Incubation Time:	6 hours
Result:	Inhibited the IL-1 $\beta$ -induced activation of the MAPK pathway in chondrocytes.

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## REFERENCES

[1]. Xu K, et al. Polygalacic acid inhibits MMPs expression and osteoarthritis via Wnt/ $\beta$ -catenin and MAPK signal pathways suppression. *Int Immunopharmacol.* 2018 Oct;63:246-252.

[2]. Guo C, et al. Neuroprotective effects of polygalacic acid on scopolamine-induced memory deficits in mice. *Phytomedicine.* 2016 Feb 15;23(2):149-55.

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

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