Norathyriol

Cat. No.: HY-N1029

CAS No.: 3542-72-1

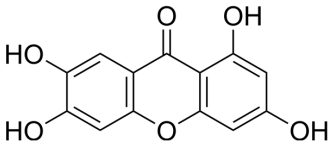
Molecular Formula: $C_{13}H_8O_6$

Molecular Weight: 260.2

Target: Glucosidase; PPAR

Pathway: Metabolic Enzyme/Protease; Cell Cycle/DNA Damage; Vitamin D Related/Nuclear Receptor

Storage: -20°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (384.32 mM; Need ultrasonic)
H_2O : < 0.1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.8432 mL	19.2160 mL	38.4320 mL
5 mM	0.7686 mL	3.8432 mL	7.6864 mL
10 mM	0.3843 mL	1.9216 mL	3.8432 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (9.61 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.61 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.61 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Norathyriol (Mangiferitin) is a natural metabolite of Mangifera. Norathyriol inhibits α-glucosidase in a noncompetitive manner with an IC_{50} of 3.12 μM[1]. Norathyriol inhibits PPARα, PPARβ, and PPARγ with IC_{50}s of 92.8 μM, 102.4 μM, and 153.5 μM, respectively[2]. Antioxidant, anticancer, antimicrobial, anti-inflammatory, anti-bacterial activities.

IC_{50} & Target

PPARα	PPARβ	PPARγ
92.8 μM (IC_{50})	102.4 μM (IC_{50})	153.5 μM (IC_{50})

In Vitro

Norathyriol (1-25 μM) inhibits growth by inducing cell cycle arrest in JB6 P+ cells. Norathyriol inhibits JB6 cell growth by inducing G2-M arrest[3].
Norathyriol suppresses UVB-induced phosphorylation of ERKs, AP-1 and NF-κB activation in JB6 P+ cells[3]Cell Growth Assay WB
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[3]

Cell Line:	Mouse skin epidermal JB6 P+ cells
Concentration:	0, 1, 10, or 25 μM
Incubation Time:	24 or 72 hours
Result:	Inhibited cell growth in a dose- as well as time-dependent manner but does not cause cell death.

Western Blot Analysis[3]

Cell Line:	JB6 P+ cells
Concentration:	0, 1, 10, or 25 μM
Incubation Time:	2 hours
Result:	Inhibited UVB-induced phosphorylation of ERKs and p90RSK.

In Vivo

Norathyriol is a natural metabolite of Mangifera in the human intestine with the oral availability and safety[1].
Norathyriol (0.92, 1.85 and 3.7 mg/kg) dose dependently decreased the serum urate levels by 27.0, 33.6 and 37.4%, respectively[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Adult Kunming mice weighing 18-22 g[4]
Dosage:	0.92, 1.85 and 3.7 mg/kg
Administration:	Administered intragastrically; twice daily for five times
Result:	The serum uric acid levels were decreased by 27.0%, 33.6% and 37.4%.

REFERENCES

[1]. Zhi-Long Shi, et al. In Vitro and In Vivo Effects of Norathyriol and Mangiferin on α-Glucosidase. Biochem Res Int. 2017;2017:1206015.

[2]. Ashley S Wilkinson,et al. Effects of the mango components mangiferin and quercetin and the putative mangiferin metabolite norathyriol on the transactivation of peroxisome proliferator-activated receptor isoforms. J Agric Food Chem. 2008 May 14;56(9):3037-42.

[3]. Jixia Li, et al. Norathyriol suppresses skin cancers induced by solar ultraviolet radiation by targeting ERK kinases. Cancer Res. 2012 Jan 1;72(1):260-70.

[4]. Yanfen Niu, et al. Hypouricaemic action of mangiferin results from metabolite norathyriol via inhibiting xanthine oxidase activity. Pharm Biol. 2016 Sep;54(9):1680-6.

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

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