Norartocarpetin

Cat. No.: HY-N10503

CAS No.: 520-30-9

Molecular Formula: $C_{15}H_{10}O_6$

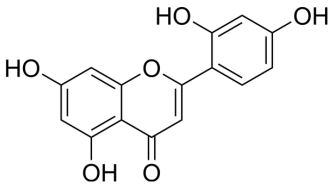
Molecular Weight: 286.24

Target: Tyrosinase; Ras; Raf; MAPKAPK2 (MK2); Apoptosis

Pathway: Metabolic Enzyme/Protease; GPCR/G Protein; MAPK/ERK Pathway; Apoptosis

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (349.36 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.4936 mL	17.4679 mL	34.9357 mL
	5 mM	0.6987 mL	3.4936 mL	6.9871 mL
	10 mM	0.3494 mL	1.7468 mL	3.4936 mL

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

BIOLOGICAL ACTIVITY

Description

Norartocarpetin is a tyrosinase inhibitor. Norartocarpetin has strong tyrosinase inhibitory activity with an IC_{50} value of 0.47 μM. Norartocarpetin as an antibrowning agent can be used for the research of food systems. Norartocarpetin also has a significant anticancer activity in lung carcinoma cells (NCI-H460) with an IC_{50} value of 22 μM. Norartocarpetin has antiproliferative effects are mediated via targeting Ras/Raf/MAPK signalling pathway, mitochondrial mediated apoptosis, S-phase cell cycle arrest and suppression of cell migration and invasion in human lung carcinoma cells[1][2].

IC_{50} & Target

IC50: 0.47 μM (tyrosinase);[1] IC50: 22 μM (NCI-H460 cells); 85 μM (MRC-9 cells)[2]

In Vitro

Norartocarpetin has strong mushroom tyrosinase inhibitory activity with an IC_{50} value of 0.47 μM[1].
Norartocarpetin (0-100 μM; 48 h) leds to dose-dependent cytotoxic effects in NCI-H460 cells and MRC-9 cells with IC_{50} values of 22 μM and 85 μM, respectively[2].
Norartocarpetin (0, 11, 22, and 44 μM; 24 h) led to blockade of Ras/Raf/MAPK signalling pathway[2].
Norartocarpetin (0, 11, 22, and 44 μM, 24 h) induced the apoptosis of the human lung carcinoma cells (NCI-H460)[2].
Norartocarpetin (0, 11, 22, and 44 μM) leds to S-phase cell cycle arrest[2].
Norartocarpetin (22 μM; 24 h) leds to dose-dependent suppression of cell invasion[2].
Norartocarpetin (0, 11, 22, and 44 μM, 24 h) leds to significant inhibition of cell migration[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

Cell Line:	MRC-9 (normal fibroblast lung cells) and NCI-H460 (human lung cancer cells)
Concentration:	0, 3.12, 6.25, 12.5, 25, 50, and 100 μM (first dissolved in DMSO at 1.0 mg/mL and then diluted to different concentrations using DMSO, 30 μL, 20min)
Incubation Time:	48 h
Result:	Repressed the viability of NCI-H460 cells in a dose-dependent manner.

Western Blot Analysis[2]

Cell Line:	MRC-9 and NCI-H460 cells
Concentration:	0, 11, 22, and 44 μM
Incubation Time:	24 h
Result:	Significantly reduced the expression of p-RAS, p-RAF and p-P38 and unchanged the expressions of RAS, RAF and P38.

Apoptosis Analysis[2]

Cell Line:	MRC-9 and NCI-H460 cells
Concentration:	0. 11, 22 and 44 μM
Incubation Time:	24 h
Result:	Led to dose-dependent apoptosis and induced DNA damage.

Cell Cycle Analysis[2]

Cell Line:	MRC-9 and NCI-H460 cells
Concentration:	0, 11, 22, and 44 μM
Incubation Time:	
Result:	Showed increase of S-phase cells and the percentage of S-phase NCI-H460 LC cells was 30%, 40%, 55% and 70% at 0, 11, 22 and 44 μM concentrations, respectively.

Cell Invasion AssayMRC-9 and NCI-H460 cells

Cell Line:	MRC-9 and NCI-H460 cells
Concentration:	22 μM
Incubation Time:	24 h
Result:	Significantly reducted (from 100% to about 40%) in the invasion of NCI-H460 human LC cells.

Cell Migration Assay [2]

Cell Line:	MRC-9 and NCI-H460 cells

Concentration:	0, 11, 22, and 44 μM
Incubation Time:	24 h
Result:	Decreased remarkably the cell invasion in NCI-H460 LC cells in a concentration- dependent manner.

REFERENCES

[1]. Zong-Ping Zheng, et al. Isolation of tyrosinase inhibitors from Artocarpus heterophyllus and use of its extract as antibrowning agent. Mol Nutr Food Res

[2]. Ning Guo, et al. Antiproliferative effects of Norartocarpetin isoflavone in human lung carcinoma cells are mediated via targeting Ras/Raf/MAPK signalling pathway, mitochondrial mediated apoptosis, S-phase cell cycle arrest and suppression of cell migration and invasion. J BUON. 2020 Mar-Apr;25(2):855-861.

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