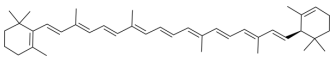
α-Carotene

Cat. No.:	HY-113462
CAS No.:	7488-99-5
Molecular Formula:	$C_{40}H_{56}$
Molecular Weight:	536.87
Target:	Others
Pathway:	Others
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 1 mg/mL (1.86 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8626 mL	9.3132 mL	18.6265 mL
	5 mM	---	---	---
	10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

α-Carotene, a precursor of vitamin A, is used as an anti-metastatic agent or as an adjuvant for anti-cancer agents. α-Carotene is isolated from yellow-orange and dark-green vegetables[1][2].

In Vitro

α-Carotene (0.5-2.5 μM; 24 hours) significantly increases protein expression of TIMP-1 and TIMP-2 in a concentration-dependent manner in LLC cells. AC (0.5-2.5 μM) significantly increases PAI-1 protein expression. α-Carotene (2.5 μM) also significantly inhibits integrin β1-mediated phosphorylation of focal adhesion kinase (FAK) which then decreased the phosphorylation of MAPK family[2].

α-Carotene (0.5, 1, 2.5 μM; 48 hours) significantly and concentration-dependently inhibits invasion of LLC during 48 h of incubation[2].

α-Carotene (0.5, 1, 2.5 μM; 24 hours) significantly decreases activities of MMP-9, -2 and uPA in concentration-dependent manner in LLC cells[2].

α-Carotene (2, 5, 10 μM; 7 days) inhibits the proliferation of the human neuroblastoma cell line GOTO in a dose- and time-dependent manner. α-Carotene (5 μM; 48 hours) halts the cell cycle at the G0/G1 phase concomitantly with a reduction in the mRNA expression of the protooncogene N-Myc[3].

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

Western Blot Analysis[2]

Cell Line:	Lewis lung carcinoma (LLC) cells
Concentration:	0.5, 1, 2.5 μM
Incubation Time:	24 hours
Result:	Significantly increased protein expression of TIMP-1 and TIMP-2 in a concentration-dependent manner in LLC cells.

In Vivo

α-Carotene (5 mg/kg; oral; twice a week; for additional 3 weeks) alone significantly decreases lung metastasis without affecting primary tumor growth[2].

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

Animal Model:	C57BL/6 male mice (4 weeks old; 20-25 g) with LLC cells[2]
Dosage:	5 mg/kg
Administration:	Oral; twice a week; for additional 3 weeks
Result:	Significantly decreased lung metastasis.

REFERENCES

[1]. Bushway, R.J., et al. Determination of α- and β-carotene in fruit and vegetables by high performance liquid chromatography. Can. Inst. Food Sci. Technol. J. 15(3), 165-169 (1982).

[2]. Liu YZ, et al. Alpha-carotene inhibits metastasis in Lewis lung carcinoma in vitro, and suppresses lungmetastasis and tumor growth in combination with taxol in tumor xenografted C57BL/6 mice. J Nutr Biochem. 2015 Jun;26(6):607-15.

[3]. Murakoshi M, et al. Inhibitory effects of alpha-carotene on proliferation of the human neuroblastoma cell line GOTO. J Natl Cancer Inst. 1989 Nov 1;81(21):1649-52.

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

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