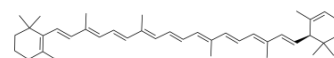


α-Carotene

Cat. No.:	HY-113462
CAS No.:	7488-99-5
Molecular Formula:	C ₄₀ H ₅₆
Molecular Weight:	536.87
Target:	Others
Pathway:	Others
Storage:	-80°C



BIOLOGICAL ACTIVITY

Description	α-Carotene, a precursor of vitamin A, is used as an anti-metastatic agent or as an adjuvant for anti-cancer drugs. α-Carotene is isolated from yellow-orange and dark-green vegetables ^{[1][2]} .								
In Vitro	<p>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].</p> <p>α-Carotene (0.5, 1, 2.5 μM; 48 hours) significantly and concentration-dependently inhibits invasion of LLC during 48 h of incubation^[2].</p> <p>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].</p> <p>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].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis^[2]</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Cell Line:</td> <td>Lewis lung carcinoma (LLC) cells</td> </tr> <tr> <td>Concentration:</td> <td>0.5, 1, 2.5 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 hours</td> </tr> <tr> <td>Result:</td> <td>Significantly increased protein expression of TIMP-1 and TIMP-2 in a concentration-dependent manner in LLC cells.</td> </tr> </table>	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.
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Result:	Significantly increased protein expression of TIMP-1 and TIMP-2 in a concentration-dependent manner in LLC cells.								
In Vivo	<p>α-Carotene (5 mg/kg; oral; twice a week; for additional 3 weeks) alone significantly decreases lung metastasis without affecting primary tumor growth^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Animal Model:</td> <td>C57BL/6 male mice (4 weeks old; 20-25 g) with LLC cells^[2]</td> </tr> <tr> <td>Dosage:</td> <td>5 mg/kg</td> </tr> </table>	Animal Model:	C57BL/6 male mice (4 weeks old; 20-25 g) with LLC cells ^[2]	Dosage:	5 mg/kg				
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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.
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Caution: Product has not been fully validated for medical applications. For research use only.

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