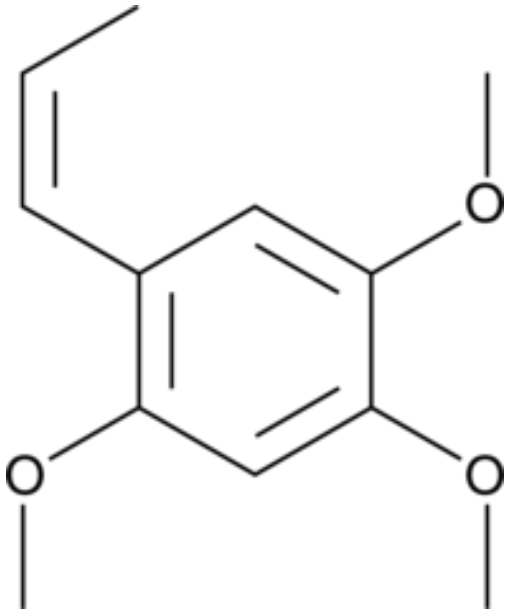
Product Data Sheet

Product Name: β-Asarone
Cat. No.: GC40574

Chemical Properties

Cas. No.	5273-86-9		
SMILES	COC1=CC(/C=C\C)=C(OC)C=C1OC		
Formula	C12H16O3	M.Wt	208.3
Solubility	DMF: 16 mg/ml,DMF:PBS(pH 7.2) (1:1): 0.5 mg/ml,DMSO: 11 mg/ml,Ethanol: 14 mg/ml	Storage	4°C, protect from light
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Protocol

Cell experiment [1]:

Product Data Sheet

Cell lines	A spontaneously immortalized rat Schwann cell line RSC96
Preparation Method	RSC96 cells treated with 0, 5, 10, and 20 μM β-asarone for 2, 4, and 6 d. Cells were digested by 0.25% trypsin and then resuspended in PBS containing 60 μg/mL proteinase K for 6 h at 60°C.
Reaction Conditions	0, 5, 10, and 20 μM for 2, 4, and 6 d
Applications	Cells cultured with β-asarone grew faster than those in the control group. Among the three concentrations, 10-μM β-asarone exhibited the strongest promoting effect on cell growth in the same time point of culture.

Animal experiment [2]:

Animal models	adult Wistar rats
Preparation Method	The animals were separated into five groups of ten rats each. The first group served as sham (SHAM). The second group was the ischemic group (MCAO). Group I and group II were treated orally by distilled water for 30 days respectively. Group III (β-Asarone-10), Group IV (β-Asarone-20) and Group V (β-Asarone-30) were treated orally by β-Asarone (10, 20 and 30 mg/kg/day, respectively) for 30 days followed by middle cerebral artery occlusion (MCAO) induced cerebral ischemia.
Dosage form	10, 20 and 30 mg/kg/day, oral, for 30 days.

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Applications	The β-Asarone-20 group and β-Asarone-30 group significantly suppressed the development of behavioral abnormality as compared with the MCAO group.

References:

[1]: Xu F, Wu H, Zhang K, Lv P, Zheng L, Zhao J. Pro-neurogenic effect of β-asarone on RSC96 Schwann cells in vitro. In Vitro Cellular & Developmental Biology-Animal. 2016 Mar;52:278-86.
[2]: Yang YX, Chen YT, Zhou XJ, Hong CL, Li CY, Guo JY. Beta-asarone, a major component of Acorus tatarinowii Schott, attenuates focal cerebral ischemia induced by middle cerebral artery occlusion in rats. BMC Complementary and Alternative Medicine. 2013 Dec;13:1-6.

Background

β-Asarone is a major component of Acorus tatarinowii Schott rhizomes, has significant pharmacological effects on the central nervous system (CNS) [1-3]. β-Asarone could pass the blood-brain barrier (BBB) [4]. β-asarone inhibits MAO-A (IC50 = 142 ± 18 μM), and MAO-B (IC50 = 362 ± 43 μM).

β-Asarone (30 μg/mL) potentiates the nerve growth factor (NGF)-induced neuronal differentiation through the phosphorylation of CREB by the activation of protein kinase-A pathway in PC12 cells [6]. β-Asarone had neuroprotective activity in LPS activated BV-2 microglia cells and depression [2,7-8].

β-Asarone (20 and 30 mg/kg/d) improved the neurological outcome after cerebral ischemia and reperfusion in terms of neurobehavioral function in rats [9]. β-Asarone improves cognitive function by suppressing neuronal apoptosis in the beta-amyloid hippocampus injection rats. [10].

References:
[1]. Cho J, Kim YH, Kong JY, Yang CH, Park CG. Protection of cultured rat cortical neurons from excitotoxicity by asarone, a major essential oil component in the rhizomes of Acorus gramineus. Life Sciences. 2002 Jun 21;71(5):591-9.
[2]. Chen YZ, Wang QW, Liang Y, Fang YQ. Protective effects of beta-asarone on cultured rat cortical neurons damage induced by glutamate. Zhong yao cai= Zhongyaocai= Journal of Chinese Medicinal Materials. 2007 Apr 1;30(4):436-9.

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

[3]. Fang YQ, Fang RM, Fang GL, Jiang Y, Fu SY. Effects of beta-asarone on expression of c-fos in kindling epilepsy rat brain. Zhongguo Zhong yao za zhi= Zhongguo Zhongyao Zazhi= China Journal of Chinese Materia Medica. 2008 Mar 1;33(5):534-6.
[4]. Fang YQ, Wei G. To analyze if the Rhizoma Acori Tatarimowii naph-tha can go through the BBB or not with GC-MS. Zhong Yao Xin Yao Yu: Ling Chuang Yao Li. 2002;3:181-2.
[5]. Tao G, Irie Y, Li DJ, Keung WM. Eugenol and its structural analogs inhibit monoamine oxidase A and exhibit antidepressant-like activity. Bioorganic & medicinal chemistry. 2005 Aug 1;13(15):4777-88.
[6]. Lam KY, Chen J, Lam CT, Wu Q, Yao P, Dong TT, Lin H, Tsim KW. Asarone from Acori Tatarinowii Rhizoma potentiates the nerve growth factor-induced neuronal differentiation in cultured PC12 cells: a signaling mediated by protein kinase A. PLoS One. 2016 Sep 29;11(9):e0163337.
[7]. Li C, Xing G, Dong M, Zhou L, Li J, Wang G, Zou D, Wang R, Liu J, Niu Y. Beta-asarone protection against beta-amyloid-induced neurotoxicity in PC12 cells via JNK signaling and modulation of Bcl-2 family proteins. European Journal of Pharmacology. 2010 Jun 10;635(1-3):96-102.
[8].Lim HW, Kumar H, Kim BW, More SV, Kim IW, Park JI, Park SY, Kim SK, Choi DK. β-Asarone (cis-2, 4, 5-trimethoxy-1-allyl phenyl), attenuates pro-inflammatory mediators by inhibiting NF-κB signaling and the JNK pathway in LPS activated BV-2 microglia cells. Food and chemical toxicology. 2014 Oct 1;72:265-72.
[9]. Yang YX, Chen YT, Zhou XJ, Hong CL, Li CY, Guo JY. Beta-asarone, a major component of Acorus tatarinowii Schott, attenuates focal cerebral ischemia induced by middle cerebral artery occlusion in rats. BMC Complementary and Alternative Medicine. 2013 Dec;13:1-6.
[10]. Geng Y, Li C, Liu J, Xing G, Zhou L, Dong M, Li X, Niu Y. Beta-asarone improves cognitive function by suppressing neuronal apoptosis in the beta-amyloid hippocampus injection rats. Biological and Pharmaceutical Bulletin. 2010 May 1;33(5):836-43.

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA