

## Product Data Sheet

Product Name: Baohuoside I

Cat. No.: GN10507

### Chemical Properties

Cas. No. 113558-15-9

Chemical Name 5,7-dihydroxy-2-(4-methoxyphenyl)-8-(3-methylbut-2-enyl)-3-[(2S,3R,4R,5R,6S)-3,4,5-trihydroxy-6-methyloxan-2-yl]oxychromen-4-one

SMILES CC1C(C(C(C(O1)OC2=C(OC3=C(C(C2=O)C(=CC(=C3CC=C(C(C)C)O)O)C4=CC=C(C=C4)OC)O)O)O

Formula C<sub>27</sub>H<sub>30</sub>O<sub>10</sub>

M.Wt 514.18

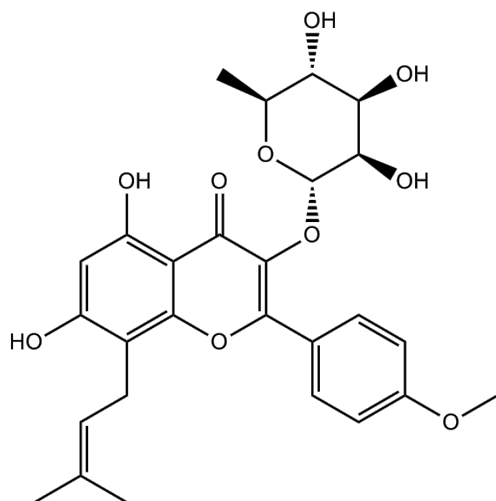
Solubility DMF: 10 mg/ml, DMSO: 10 mg/ml, Ethanol: 0.5 mg/ml, PBS (pH 7.2): 0.1 mg/ml

Storage Store at -20°C

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]:

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

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|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cell lines          | Human cervical cancer HeLa cells                                                                                                                                                               |
| Preparation Method  | Baohuoside I was dissolved in dimethyl sulfoxide (DMSO) as a 10 mM stock solution and stored at 4°C.                                                                                           |
| Reaction Conditions | Invasion assay by polycarbonate membranes with a pore size of 8 µm, 25 µM baohuoside I                                                                                                         |
| Applications        | Baohuoside I correlates with cervical cancer cell downregulation of CXC chemokine receptor 4. CXCL12 induced the invasion of cervical cancer cells, and baohuoside I effectively abrogated it. |

### Animal experiment [2]:

|                    |                                                                                                                                                                                                                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Animal models      | Inbred female C57/BL/6J mice                                                                                                                                                                                                                                                                     |
| Preparation Method | Baohuoside I is stored in pure ethanol and suspended in 0.9% sterile saline intraperitoneal injection.                                                                                                                                                                                           |
| Dosage form        | Intraperitoneal injection, 20 mg/kg/d                                                                                                                                                                                                                                                            |
| Applications       | Mice received Baohuoside I by daily i.p. injection from day 0 to day 4. They were immunized with sheep red blood cells (SRBC) at day 0 and bled at day 5. The results showed significant suppression of anti-SRBC antibody responses at dosage schedules of 18.8 mg/ kg/day and above (P<0.001). |

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### References:

[1]. Kim B, et al. Baohuoside I suppresses invasion of cervical and breast cancer cells through the downregulation of CXCR4 chemokine receptor expression. Biochemistry. 2014 Dec 9;53(48):7562-9.

[2]. Li SY, Ping G, Geng L, et al. Immunopharmacology and toxicology of the plant flavonoid baohuoside-1 in mice. Int J Immunopharmacol 1994; 16: 227.

### Background

Baohuoside I, a flavonoid isolated from Epimedium koreanum Nakai, acts as an inhibitor of CXCR4, downregulates CXCR4 expression, induces apoptosis and shows anti-tumor activity [1].

Baohuoside I exhibited strong inhibition against the  $\alpha$ -glucosidase while icariin and epimedin A, B and C were weak or inactive. All compounds were inactive against pancreatic  $\alpha$ -amylase. The IC<sub>50</sub> of baohuoside I was 28.9  $\mu$ mol/L [2]. A549 cells were evidently inhibited by Baohuoside I in a time- and concentration-dependent manner. IC<sub>50</sub> was approximately 25.1  $\mu$ M at 24 h, 11.5  $\mu$ M at 48 h and 9.6  $\mu$ M at 72 h, respectively [3].

Baohuoside I prolonged graft survival on rat. A negative control group showed a mean survival time of 6.5 $\pm$ 0.5 days. Monotherapy with a subtherapeutic oral dose of Baohuoside I (8.0 mg/kg/day) or FK506 (1.0 mg/kg/day) significantly prolonged cardiac allograft survival up to 9.0 $\pm$ 2.0 days or 16.4 $\pm$ 6.3 days, compared with negative controls. Results with combination therapy of these two drugs in the same doses (25.0 $\pm$ 2.0 days) indicate that an additive prolongation of graft survival was produced when compared with monotherapy with Baohuoside I or FK506 [4].

### References:

[1]. Kim B, et al. Baohuoside I suppresses invasion of cervical and breast cancer cells through the downregulation of CXCR4 chemokine receptor expression. Biochemistry. 2014 Dec 9;53(48):7562-9.

[2]. M.A.T. Phan, J. Wang, J.Y. Tang, et al. Evaluation of  $\alpha$ -glucosidase inhibition potential of some flavonoids from Epimedium brevicornum L. WT-Food Science and Technology, 53 (2013), pp. 492-498.

[3]. Song J, et al. Reactive oxygen species-mediated mitochondrial pathway is involved in Baohuoside I-induced apoptosis in human non-small cell lung cancer. Chem Biol Interact. 2012 Jul

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30;199(1):9-17.

[4].A. Ma, S. Qi, D. Xu, X. Zhang, P. Daloze, H. Chen . Baohuoside-1, a novel immunosuppressive molecule, inhibits lymphocyte activation in vitro and in vivo. Transplantation, 78 (2004), pp. 831-838.

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