# Atractylenolide I

Catalog No.C13321 Batch:C1332103

# Product Datasheet

## Technical Data

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| **Formula** | $C_{15}H_{18}O_2$ | | | | | |
| **Molecular Weight** | 230.30 | **CAS No.** | 73069-13-3 | | | |
| **Solubility (25°C)*** | In vitro | | | | | |
| | *In vivo* (Add solvents to the product individually and in order) | Injection | Clear solution | 6%DMSO $\xrightarrow{1}$ 40%PEG300 $\xrightarrow{2}$ 6%Tween80 $\xrightarrow{3}$ 48%ddH2O<br>Validated by Capsid Bio labs. Should you need adjustments to this formulation, contact our sales team for custom testing. | 6.000mg/ml (26.05mM) | Taking the 1 mL working solution as an example, add 60 μL of 100 mg/ml clarified DMSO stock solution to 400 μL of PEG300, mix evenly to clarify it; add 60 μL of Tween80 to the above system, mix evenly to clarify it; then continue to add 480 μL of ddH2O to adjust the volume to 1 mL. The mixed solution should be used immediately for optimal results. |

* <1 mg/ml means slightly soluble or insoluble.
* Please note that Capsid Bio tests the solubility of all compounds in-house, and the actual solubility may differ slightly from published values. This is normal and is due to slight batch-to-batch variations.
* Room temperature shipping (Stability testing shows this product can be shipped at 2-8°C for storage purposes.)

## Biological Activity

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| **Description** | Atractylenolide I is the major sesquiterpenoid of the rhizome of A. macrocephala and shows a wide spectrum of pharmacological activities such as antiinflammatory, digestion promoting, and antioxidant effects. |
| **In vitro** | Atractylenolide I decreases the TNF-α level in LPS-stimulated peritoneal macrophages in a dosedependent manner, IC50=23.1 μM. It also inhibits NO production in LPS-activated peritoneal macrophages, IC50=41 μM. The IC50 of this compound for inhibiting the activity of iNOS is 67.3 μM. It shows no marked effects against 5-lipoxygenase (5-LOX) and cyclooxygenase (COX). This chemical is also reported previously to act on white blood cell membranes and TLR4 and its antiinflammatory activity is related to antagonizing TLR4 [1]. |
| **In vivo** | Atractylenolide I has anti-inflammatory effects. The treatment of this compound significantly attenuates LPS-induced lung wet-to-dry weight ratio and MPO activity in LPS-induced acute lung injury mouse. It also significantly inhibits the production of TNF-α, IL-6, IL-1β, IL-13, and MIF production in bronchoalveolar lavage fluid (BALF), as well as neutrophils and macrophages in BALF, upregulates the production of IL-10 in BALF. This chemical protects mice acute lung injury induced by LPS via inhibition of TLR4 expression and NF-κB activation[2]. |

## Protocol (from reference)

### Cell Assay:[1]

- **Cell lines**
  peritoneal macrophages
- **Concentrations**
  1-1000 μM
- **Incubation Time**
  24 h
- **Method**
  $2 \times 10^4$ cells per well are plated into 96-well plates, cells/well to a final volume of 200 μL, incubated at 37 °C for 24 h, and given a fresh change of medium. The cells are treated with atractylenolide I (1-1000 μM) dissolved in DMSO, and with LPS (final concentration 10 μg/mL) alone or in combination with this compound (1–100 μM) dissolved in DMSO. This DMSO percentage allows the optimal solubilization of this chemical in aqueous solution. The control and LPS wells receive the same amount of DMSO. After 24 h of incubation at 37 °C, 20 μL of MTT (5 mg/mL) is added to each well and 4 h later the cells are lysed with 150 μL DMSO. The plate is shaken for 10 min and 30 min later the optical densities (OD570) for this compound are compared with the OD of the control or LPS stimulated wells to assess the cytotoxicity.

### Animal Study:[2]

- **Animal Models**
  LPS-induced acute lung injury mouse
- **Dosages**
  5, 10 and 20 mg/kg
- **Administration**
  i.p.

## References


https://pubmed.ncbi.nlm.nih.gov/17221938/ https://pubmed.ncbi.nlm.nih.gov/26297303/



**RETURN POLICY**

Capsid Bio's Unconditional Return Policy ensures a smooth online shopping experience for our customers. If you are in any way unsatisfied with your purchase, you may return any item(s) within 7 days of receiving it. In the event of product quality issues, either protocol related or product related problems, you may return any item(s) within 365 days from the original purchase date. Please follow the instructions below when returning products.

**SHIPPING & STORAGE**

Capsid Bio products are transported at room temperature. If you receive the product at room temperature, please rest assured, the Capsid Bio Quality Inspection Department has conducted experiments to verify that the normal temperature placement of one month will not affect the biological activity of powder products. After collecting, please store the product according to the requirements described in the datasheet. Most Capsid Bio products are stable under the recommended conditions.

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**EU Headquarters**
Gajeva ulica 28, HR-10000 Zagreb, Croatia

**US Headquarters**
12222 Merit Dr STE 130 Dallas, Texas, 75251

**UK Headquarters**
121 ABILITY HOUSE, BROOKER ROAD, EN9 1JH, ESSEX

Orders: Sales@capsidbio.com
Enquiries: info@capsidbio.com
www.capsidbio.com