**PRODUCT INFORMATION**

**Contents:**
- 10 mg Isoliquiritigenin

**Storage and stability:**
- Isoliquiritigenin is provided lyophilized and shipped at room temperature. Store at -20°C.
- Upon resuspension, prepare aliquots of isoliquiritigenin and store at -20°C. Resuspended isoliquiritigenin is stable for 6 months when properly stored.

**Quality control:**
- Purity >95% (liquid chromatography).
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.
- The inhibitory activity of the product has been validated using cellular assays.

**DESCRIPTION**

Isoliquiritigenin (ILG), a simple chalcone-type flavonoid isolated from licorice root (*Glycyrrhiza uralensis*), exhibits anti-oxidant, anti-inflammatory, and anti-tumor activities. ILG was recently reported to block LPS-induced TLR4/MD2 complex signaling and NF-κB activation, and to inhibit NLRP3-activated ASC oligomerization. Interestingly, NLRP3-dependent IL-1β production has been inhibited with low concentrations of ILG (1 to 10 μM). Thus, ILG can block the NLRP3 inflammasome at both the priming step and the activation step.


**CHEMICAL PROPERTIES**

**Solubility:** 50 mg/ml (195 mM) in DMSO or ethanol

**CAS number:** 961-29-5

**Formula:** C15H12O4

**Molecular weight:** 256 g/mol

**Structure:**

![Chemical Structure of Isoliquiritigenin]

**METHODS**

**Preparation of 1 mg/ml (3.9 mM) stock solution**
1. Add 1 ml of DMSO to 10 mg isoliquiritigenin. Mix by vortexing.
2. Prepare a 1:10 dilution with DMSO to obtain a 1 mg/ml solution
3. Prepare further dilutions by adding the appropriate amount of endotoxin-free water.

**Inflammasome inhibition assay:**
The following protocol describes the monitoring of inflammasome inhibition by isoliquiritigenin in the human monocytic THP1-Null cell line by measuring the inhibition of IL-1β production. The cells are grown in suspension to a density of 1.0 x 10^6 cells/ml in RPMI 1640 medium supplemented with 10% heat inactivated fetal bovine serum.

1. Prime cells by adding 1 mg/ml LPS for 3 hours at 37 °C in 5% CO2.
2. Wash cells gently with PBS and add fresh culture medium.
3. Stimulate cells by adding IL-1β inducers, such as ATP (5 mM) or MSU crystals (100-200 mg/ml), in the presence or absence of isoliquiritigenin (1-50 μg/ml).
4. Incubate from 6 hours to overnight at 37°C in 5% CO2.
5. Determine caspase-1 inhibition by detecting mature IL-1β in the supernatant of THP-1 cells by Western blot, ELISA, or with InvivoGen’s HEK-Blue™ IL-1β cells, which are specifically engineered to detect bioactive IL-1β.

**PROTOCOLS**

(For reference only)

**Cell Culture Assay**
Cells: RAW 264.7 cells
Working concentration: 30 μM (7.7 μg/ml)
Pre-incubation: 30 minutes
Method: NF-κB activation was monitored by measuring GFP expression from a reporter construct using flow cytometry.

**Animal Study**
Animal model: BALB/c mice
Dose: 50 mg/kg
Administration: Orally

**RELATED PRODUCTS**

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<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Cat. Code</th>
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<tbody>
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<td>ATP</td>
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<td>HEK-Blue™ IL-1β cells</td>
<td>IL-1β reporter cells</td>
<td>hkb-il1b</td>
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<td>MSU Crystals</td>
<td>Monosodium urate crystal</td>
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<td>Caspase-1 inhibitor</td>
<td>inh-ptd</td>
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<tr>
<td>Z-VAD-FMK</td>
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<td>tlr-vad</td>
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</tbody>
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