**Product Data Sheet**

### Chemical Properties

- **Product Name:** MK-571
- **CAS No.:** 115104-28-4
- **M.Wt:** 515.09
- **Formula:** C26H27ClN2O3S2

**Chemical Name:** (R,E)-3-(((3-(2-(7-chloroquinolin-2-yl)vinyl)phenyl)((3-(dimethylamino)-3-oxopropyl)thio)methyl)thio)propanoic acid

**Canonical SMILES:** ClC=CC=C2(C(C=C2)/C/C/C3=CC([C@@H](SCCC(O)=O)SCCC(N(C)C)=O)=CC=C3)=C1

**Solubility:** <5.15mg/mL in DMSO

**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.

**Shopping Condition:** Evaluation sample solution: ship with blue ice
All other available size: ship with RT, or blue ice upon request

### Biological Activity

**Targets:** GPCR/G protein

**Pathways:** Leukotriene Receptor

**Description:**

MK-571 (L-660,711) is a novel potent and selective antagonist of leukotriene D4 receptor with Ki values of 0.22 nM and 2.1 nM in guinea pig and human lung membranes, respectively [1]. MK-571 is also a specific inhibitor of the multidrug resistance protein 1 (MRP1) [2]. Leukotriene D4 (LTD4) is one of the leukotrienes and is released by basophils. LTD4 induces the
contraction of smooth muscle and increases vascular permeability. Cysteinyl leukotriene receptor 1 (cysLT1 receptor, LTD4 receptor) is a G protein-coupled receptor activated by LTD4 [3]. MK-571 (L-660,711) is a potent, selective and orally active leukotriene D4 receptor antagonist. MK-571 competitively antagonized contractions of guinea pig trachea and ileum induced by LTD4 (pA2 values, 9.4 and 10.5) and LTE4 (pA2 values, 9.1 and 10.4), and antagonized contractions of human trachea induced by LTD4 with pA2 value of 8.5 [1]. In anesthetized guinea pigs, MK-571 antagonized bronchoconstriction induced by LTC4, LTD4, and LTE4 [1]. In mice, MK-571 (1, 10, 100 mg/kg) inhibited inflammatory cell infiltration in the bronchoalveolar lavage in a dose-dependent way with maximal inhibition of 90%. MK-571 also inhibited bronchial hyperreactivity and reduced lung microvascular leakage by 22% at 10 mg/kg [3].

Reference:

Protocol

Cell experiment:

Cell lines U937 cell line
Preparation method The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20 °C for several months.
Reacting conditions IL-6 protein determination: Freshly isolated monocytes were stimulated with medium, LPS (1 ng/ml), MK-571 (10 μM), and the combination of both during 24 h.
Applications Costimulating the cells with 10 μM MK-571 and 1 ng/ml LPS enhanced IL-6 secretion (2.0 ± 0.4 fold increase, p < 0.01) than cells only stimulated by LPS. And a 1.6 fold increase in IL-6 mRNA expression was also observed by the combination of LPS and MK-571 compared to the effects of LPS alone.

Animal experiment [3]:
Animal models
Sensitized male Balb/c mice weighing 20±25 g

Dosage form
Effect of MK-571 on cell infiltration: Animals were treated with an injection of MK-571 in the caudal vein (1, 10, 100 mg/kg) for 30 min

Applications
The MK-571 inhibition for eosinophil infiltration in the bronchoalveolar lavage was 46%, 63.9% and 90% at the dose of 1 mg/kg, 10 mg/kg and 100 mg/kg. And MK-571 produced a total inhibition of neutrophil infiltration.

Other notes
Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Reference:

Caution

FOR RESEARCH PURPOSES ONLY.
NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Short-term storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.