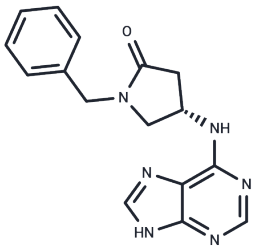
# Data Sheet (Cat.No.T36486)

TargetMol

## Benpyrine

### Chemical Properties



CAS No. : 2550398-89-3

Formula: C16H16N6O

Molecular Weight: 308.34

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

### Biological Description

| | |
|---|---|
| Description | Benpyrine is a highly specific and orally active TNF-α inhibitor with a KD value of 82.1 μM and an IC50 value of 0.109 μM. It tightly binds to TNF-α, blocking its interaction with TNFR1, and has potential for TNF-α mediated inflammatory and autoimmune disease research [1]. |
| Targets(IC50) | Others,TNF |
| In vitro | Benpyrine (5-20 μM; 14 hours; RAW264.7 cells) pretreatment results in a dose-dependent decrease in the phosphorylation of IκBα in RAW264.7 cells (stimulated with 10 ng/mL TNF-α or 1 μg/mL LPS). Benpyrine abolishes the TNF-α-induced nuclear translocation of NF-κB/p65 in RAW264.7 cells[1].Benpyrine only blocks cell death induced by TNF-αWT and Y119A, and increases the cell survival rate up to 80%. Benpyrine does not obviously affect L57A- and Y59L-induced cytotoxicity in L929 cells[1]. |
| In vivo | Benpyrine (25-50 mg/kg; oral gavage; daily; for 2 weeks; Balb/c mice) significantly alleviates collagen-induced arthritis symptoms by dose-dependently decreasing proinflammatory cytokines (IFN-γ, IL-1β, IL-6) and increasing the anti-inflammatory cytokine IL-10. In a murine endotoxemia model, Benpyrine (25 mg/kg) reduces TNF-α-induced inflammation, thereby mitigating liver and lung injury[1]. |

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|---|---|---|---|
| 1 mM | 3.2432 mL | 16.2159 mL | 32.4317 mL |
| 5 mM | 0.6486 mL | 3.2432 mL | 6.4863 mL |
| 10 mM | 0.3243 mL | 1.6216 mL | 3.2432 mL |
| 50 mM | 0.0649 mL | 0.3243 mL | 0.6486 mL |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Weiguang Sun, et al. Discovery of an Orally Active Small Molecule TNF-α Inhibitor. J Med Chem. 2020 Jul 15.