# Data Sheet (Cat.No.T73336)

TargetMol

## Ketotifen

### Chemical Properties

CAS No. : 34580-13-7

Formula: C19H19NOS

Molecular Weight: 309.43

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

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|---|---|
| Description | Ketotifen is a second-generation, orally active, non-competitive histamine 1 (H1) receptor blocker and mast cell stabilizer that inhibits 6-phosphogluconate dehydrogenase (6-PGD) in vitro. Ketotifen exhibits antiviral activity against SARS-CoV-2 and influenza virus and is suitable for research on experimental autoimmune encephalomyelitis (EAE) and asthma attack prevention. |
| Targets(IC50) | Others,Endogenous Metabolite,Histamine Receptor,Influenza Virus,SARS-CoV |
| In vitro | Ketotifen (0-100 μM; 2 or 4 days) inhibits SARS-CoV-2 with an EC50 of 48.9 μM; and increases the percentage inhibition of SARS-CoV-2 to 79%, 83% and 93% when co-administers with 25, 50 and 100 μM Indomethacin, respectively[3].<br>Ketotifen (0-50 μM; 24 h) has inhibitory activity against PR8, pH1N1 and H3N2 with EC50s of 5.9 μM, 33.7 μM and 48.5 μM, respectively; and exhibits relatively low cytotoxicity in MDCK cells (EC50=291 μM)[4]. |
| In vivo | Ketotifen (80 mg/kg; i.g.; daily for 3 days) reduces end organ damage and mortality in mice infected with influenza virus[4].<br>Ketotifen (0.4 mg/kg; i.p.; daily for 10 days) reduces encephalomyelitis (EAE) prevalence and severity[5]. |

### Solubility Information

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|---|---|
| Solubility | DMSO: 8 mg/mL (25.85 mM),Sonication is recommended.<br>(< 1 mg/ml refers to the product slightly soluble or insoluble) |

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|---|---|---|---|
| 1 mM | 3.2317 mL | 16.1587 mL | 32.3175 mL |
| 5 mM | 0.6463 mL | 3.2317 mL | 6.4635 mL |
| 10 mM | 0.3232 mL | 1.6159 mL | 3.2317 mL |
| 50 mM | 0.0646 mL | 0.3232 mL | 0.6463 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

Klooker TK, et al. The mast cell stabiliser ketotifen decreases visceral hypersensitivity and improves intestinal symptoms in patients with irritable bowel syndrome. Gut. 2010 Sep;59(9):1213-21.
Zhang H, et al. Advances in the discovery of exosome inhibitors in cancer. J Enzyme Inhib Med Chem. 2020;35(1):1322-1330.
Kiani P, et al. In Vitro Assessment of the Antiviral Activity of Ketotifen, Indomethacin and Naproxen, Alone and in Combination, against SARS-CoV-2. Viruses. 2021 Mar 26;13(4):558.
Enkirch T, et al. Identification and in vivo Efficacy Assessment of Approved Orally Bioavailable Human Host Protein-Targeting Drugs With Broad Anti-influenza A Activity. Front Immunol. 2019 Jun 5;10:1097.
Pinke KH, et al. Calming Down Mast Cells with Ketotifen: A Potential Strategy for Multiple Sclerosis Therapy? Neurotherapeutics. 2020 Jan;17(1):218-234.