# Pirodavir

**Cat. No.:** HY-13784

**CAS No.:** 124436-59-5

**Molecular Formula:** $C_{21}H_{27}N_3O_3$

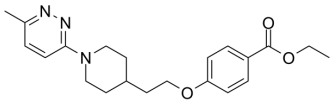
**Molecular Weight:** 369.46

**Target:** Enterovirus

**Pathway:** Anti-infection

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 2 years |
| | -20°C | 1 year |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 10 mg/mL (27.07 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 2.7067 mL | 13.5333 mL | 27.0665 mL |
| | 5 mM | 0.5413 mL | 2.7067 mL | 5.4133 mL |
| | 10 mM | 0.2707 mL | 1.3533 mL | 2.7067 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1 mg/mL (2.71 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1 mg/mL (2.71 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1 mg/mL (2.71 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Pirodavir is a potent, broad-spectrum picornavirus inhibitor, and is highly active against both group A and group B rhinovirus serotypes.Pirodavir is very potent in a virus yield reduction assay ($IC_{90}$=2.3 nM).

**$IC_{50}$ & Target**

Rhinovirus[1]

**In Vitro**

Pirodavir is a potent, broad-spectrum picornavirus inhibitor. Pirodavir inhibits 80 of the 100 human rhinovirus (HRV) strains tested at a concentration of 64 ng/mL. In that same study, Pirodavir is also effective in inhibiting 16 enteroviruses, with a

mean 80% inhibitory concentration ($IC_{80}$) of 1,300 ng/mL. Pirodavir inhibits enterovirus 71 replication with an $IC_{50}$ of 5,420 nM and an $IC_{90}$ of >13,350 nM. Pirodavir inhibits 56 rhinovirus laboratory strains and three of the clinical isolates tested. Pirodavir inhibits 59% of the serotypes and isolates with $IC_{50}$s of <100 nM[1]. Pirodavir concentrations of 16 and 4μg/mL reduces cell growth by 66% (s.e.m. 0.75) and 28% (s.e.m. 0.25), respectively. Lower concentrations (1μg/mL) of Pirodavir are not inhibitory for cell growth. The 50% cytotoxic concentration of pirodavir for logarithmic cell growth at 37°C is 7μg/mL. Under the conditions of the antiviral assay (confluent HeLa cells at 33°C), the 50% cytotoxic concentration is >50μg/mL[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

**Cell Assay** [2]

HeLa cells are seeded at a concentration of approximately 180,000 cells per dish in six-well plates containing 4 mL of growth medium. Growth medium consist of Eagle's basal medium, supplemented with 5% fetal calf serum, 2% sodium bicarbonate, and 1% glutamine. After 24 h of incubation at 37°C in a humidified $CO_2$ atmosphere, the growth medium is removed and replaced by the test solutions (fresh growth medium with or without various concentrations of the antiviral compounds). To assess the cytotoxicity of the antiviral compounds (e.g., Pirodavir), the number of living cells are determined present in triplicate cultures at the time of Pirodavir addition and every 24 h for 3 days. Following trypsinization, the number of viable cells for each drug concentration is counted in triplicate with a Coulter Counter[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- J Med Virol. 2022 Jul 5.
- Nanoscale. 2018 Jan 18;10(3):1440-1452.
- Microorganisms. 2023 May 24, 11(6), 1371.

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## REFERENCES

[1]. Barnard DL, et al. In vitro activity of expanded-spectrum pyridazinyl oxime ethers related to pirodavir: novel capsid-binding inhibitors with potent antipicornavirus activity. Antimicrob Agents Chemother. 2004 May;48(5):1766-72.

[2]. Andries K, et al. In vitro activity of pirodavir (R 77975), a substituted phenoxy-pyridazinamine with broad-spectrum antipicornaviralactivity. Antimicrob Agents Chemother. 1992 Jan;36(1):100-7.



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