# Lopinavir (ABT-378)

Catalog No.C07755 Batch:C0775503

# Product Datasheet

## Technical Data

| | | | |
|---|---|---|---|
| **Formula** | $C_{37}H_{48}N_4O_5$ | | |
| **Molecular Weight** | 628.8 | **CAS No.** | 192725-17-0 |
| **Solubility (25°C)*** | In vitro | DMSO | 100 mg/mL (159.03 mM) |
| | | Ethanol | 100 mg/mL (159.03 mM) |
| | | Water | Insoluble |

* <1 mg/ml means slightly soluble or insoluble.
* Please note that Capsid Bio tests the solubility of all compounds in-house, and the actual solubility may differ slightly from published values. This is normal and is due to slight batch-to-batch variations.
* Room temperature shipping (Stability testing shows this product can be shipped at 2-8°C for storage purposes.)

## Preparing Stock Solutions

| Concentration \ Volume / Mass | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 1.5903 mL | 7.9517 mL | 15.9033 mL |
| 5 mM | 0.3181 mL | 1.5903 mL | 3.1807 mL |
| 10 mM | 0.1590 mL | 0.7952 mL | 1.5903 mL |
| 50 mM | 0.0318 mL | 0.1590 mL | 0.3181 mL |

## Biological Activity

| | |
|---|---|
| **Description** | Lopinavir (ABT-378) is a potent **HIV protease** inhibitor with $K_i$ of 1.3 pM in a cell-free assay. |
| **Targets** | HIV protease [1]<br>(Cell-free assay)<br>1.3 pM(Ki) |
| **In vitro** | Lopinavir (ABT-378) binds to mutant HIV protease (V82A, V82F and V82T) with Ki of 4.9 pM, 3.7 pM and 3.6 pM, respectively. It inhibits 93% of wild-type HIV protease activity at 0.5 nM, and also suppresses HIV protease activity in the absence and presence of 50% HS with EC50 of 17 nM and 102 nM, respectively, in MT4 cells. [1] This compound is converted to several metabolites in an NADPH-dependent manner in liver microsomes with the primary metabolites M-3 and M-4. [2] It is a potent inhibitor of Rh123 efflux in Caco-2 monolayers with IC50 of 1.7 mM. Its exposure (72 hours) in LS 180V cells reduces the content of intracellular Rh123, and it induces P-glycoprotein immunoreactive protein and messenger RNA levels in LS 180V cells. [3] It inhibits subtype C clone C6 with IC50 of 9.4 nM. [4] Additionally, it inhibits CYP3A with IC50 of 7.3 mM in human liver microsomes, while producing negligible or weak inhibition of human CYP1A2, 2B6, 2C9, 2C19 and 2D6. [5] |
| **In vivo** | Lopinavir (ABT-378) (10 mg/kg, orally) results in Cmax of 0.8 μg/mL and oral bioavailability of 25% in rats. [1] |

## Protocol (from reference)

**Animal Study:**[1]

- **Animal Models**
  Sprague-Dawley-derived rats or cynomolgus monkeys
- **Dosages**
  10 mg/kg
- **Administration**
  Orally

## References


https://pubmed.ncbi.nlm.nih.gov/9835517/ https://pubmed.ncbi.nlm.nih.gov/9884314/ https://pubmed.ncbi.nlm.nih.gov/12700464/


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### RETURN POLICY

Capsid Bio's Unconditional Return Policy ensures a smooth online shopping experience for our customers. If you are in any way unsatisfied with your purchase, you may return any item(s) within 7 days of receiving it. In the event of product quality issues, either protocol related or product related problems, you may return any item(s) within 365 days from the original purchase date. Please follow the instructions below when returning products.

### SHIPPING & STORAGE

Capsid Bio products are transported at room temperature. If you receive the product at room temperature, please rest assured, the Capsid Bio Quality Inspection Department has conducted experiments to verify that the normal temperature placement of one month will not affect the biological activity of powder products. After collecting, please store the product according to the requirements described in the datasheet. Most Capsid Bio products are stable under the recommended conditions.

**NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**


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