Pepstatin

Cat. No.: HY-P0018
CAS No.: 26305-03-3
Molecular Formula: C₃₄H₆₃N₅O₉
Molecular Weight: 685.89
Sequence: IsoValeryl-Val-Val-Sta-Ala-Sta-OH
Sequence Shortening: IsoVeryl-VV-Sta-A-Sta-OH
Target: Proteasome; HIV Protease; Autophagy
Pathway: Metabolic Enzyme/Protease; Anti-infection; Autophagy
Storage: Powder -80°C 2 years
        -20°C 1 year
        In solvent -80°C 6 months
        -20°C 1 month

SOLVENT & SOLUBILITY

In Vitro DMSO : ≥ 25 mg/mL (36.45 mM)
        "≥" means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td>1.4580 mL</td>
<td>7.2898 mL</td>
<td>14.5796 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>0.2916 mL</td>
<td>1.4580 mL</td>
<td>2.9159 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.1458 mL</td>
<td>0.7290 mL</td>
<td>1.4580 mL</td>
</tr>
</tbody>
</table>

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

BIOLOGICAL ACTIVITY

Description
Pepstatin (Pepstatin A) is a specific aspartic protease inhibitor produced by actinomycetes, with IC₅₀s of 4.5 nM, 6.2 nM, 150 nM, 290 nM, 520 nM and 260 nM for hemoglobin-pepsin, hemoglobin-proctase, casein-pepsin, casein-proctase, casein-acid protease and hemoglobin-acid protease, respectively. Pepstatin Ammonium also inhibits HIV protease.

IC₅₀ & Target
IC50: 4.5 nM (Hemoglobin-pepsin), 6.2 nM (Hemoglobin-proctase), 150 nM (Casein-pepsin), 260 nM (Hemoglobin-acid protease), 290 nM (Casein-proctase), 520 nM (Casein-acid protease)[1]

In Vitro
Pepstatin (Pepstatin A) is a specific acid protease inhibitor produced by actinomycetes, with IC₅₀s of 4.5 nM, 6.2 nM, 150 nM, 290 nM, 520 nM and 260 nM for hemoglobin-pepsin, hemoglobin-proctase, casein-pepsin, casein-proctase, casein-acid protease and hemoglobin-acid protease, respectively[1]. Pepstatin (Pepstatin A) inhibits the recombinant HIV protease with an IC₅₀ of 250 μM. Pepstatin shows no effect on cellular protein synthesis and probably does not exert severe cell toxicity[2].

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

Pepstatin (Pepstatin A) has a very low toxicity, with LD$_{50}$s of 1090 mg/kg, 875 mg/kg, 820 mg/kg and 450 mg/kg for mice, rats, rabbits, and dogs by i.p. route, and > 2000 mg/kg for all species by oral route. Pepstatin (0.5-50 mg/kg, p.o.) suppresses stomach ulceration of the pylorus in ligated Shay rats$^1$.

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

---

**PROTOCOL**

**Cell Assay$^2$**

Pepstatin A is freshly dissolved in DMSO at 7 mM. It is very slowly diluted (1:100) into the medium of HIV-infected H9 suspension cultures so that no pepstatin A precipitated (final concentration, 70 μM pepstatin A and 1% DMSO), and the cultures are incubated without change of culture medium for 48 hr. As control, uninfected H9 cells are also incubated with pepstatin and in addition HIV infected and uninfected cells are incubated with 1% DMSO but without pepstatin$^2$.

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

---

**CUSTOMER VALIDATION**


See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

---

**REFERENCES**


---

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA