

Product Name: NVP DPP 728 dihydrochloride

Catalog No.: 3506

Batch No.: 1

CAS Number: 207556-62-5

IUPAC Name: 6-[[2-[[2-(2S)-2-Cyano-1-pyrrolidiny]-2-oxoethyl]amino]ethyl]amino-3-pyridinecarbonitrile dihydrochloride

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{15}H_{18}N_6O \cdot 2HCl \cdot \frac{1}{4}H_2O$

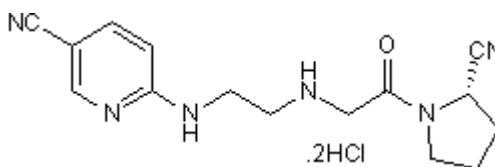
Batch Molecular Weight: 375.77

Physical Appearance: white solid

Solubility: water to 100 mM
DMSO to 100 mM

Storage: Desiccate at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: $R_f = 0.39$ (Dichloromethane:Methanol [9:1])

HPLC: Shows 98.9% purity

1H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Optical Rotation: $[\alpha]_D = -70.5$ (Concentration = 1.23, Solvent = Methanol)

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	47.95	5.5	22.36
Found	47.93	5.58	22.4

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Description:

Potent, orally active dipeptidyl peptidase (DPP)-IV inhibitor ($K_i = 11$ nM, $IC_{50} = 14$ nM) that displays > 15 000-fold selectivity over DPP-II and a range of proline-cleaving proteases. Exhibits antidiabetic activity in vivo; improves glucose tolerance, increases glucagon-like peptide 1 (GLP-1) and insulin levels, augments insulin secretion and GLUT2 levels, and reduces (preserves) islet size.

Physical and Chemical Properties:

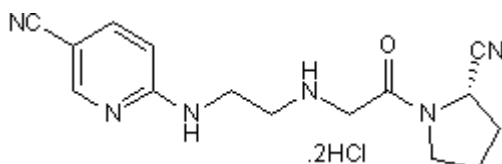
Batch Molecular Formula: $C_{15}H_{18}N_6O \cdot 2HCl \cdot \frac{1}{4}H_2O$

Batch Molecular Weight: 375.77

Physical Appearance: white solid

Minimum Purity: >98%

Batch Molecular Structure:



Storage: Desiccate at RT

Solubility & Usage Info:

water to 100 mM
DMSO to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Hughes *et al* (1999) NVP-DPP728 (1-[[[2-[(5-cyanopyridin-2-yl)amino]ethyl]amino]acetyl]-2-cyano-(S)-pyrrolidine), a slow-binding inhibitor of dipeptidyl peptidase IV. *Biochemistry* **38** 11597. PMID: 10512614.

Reimer *et al* (2002) Long-term inhibition of dipeptidyl peptidase IV improves glucose tolerance and preserves islet function in mice. *Eur.J.Endocrinol.* **146** 717. PMID: 11980629.

Mitani *et al* (2002) Dipeptidyl peptidase IV inhibitor NVP-DPP728 ameliorates early insulin response and glucose tolerance in aged rats but not in aged Fischer 344 rats lacking its enzyme activity. *Jpn.J.Pharmacol.* **88** 451. PMID: 12046989.

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