

Certificate of Analysis

www.tocris.com

Product Name: Pemetrexed

Catalog No.: 6185

Batch No.: 1

CAS Number: 137281-23-3

IUPAC Name: *N*-[4-[2-(2-Amino-4,7-dihydro-4-oxo-3*H*-pyrrolo[2,3-*d*]pyrimidin-5-yl)ethyl]benzoyl]-L-glutamic acid

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₀H₂₁N₅O₆·0.33C₂H₅OH·1¼H₂O

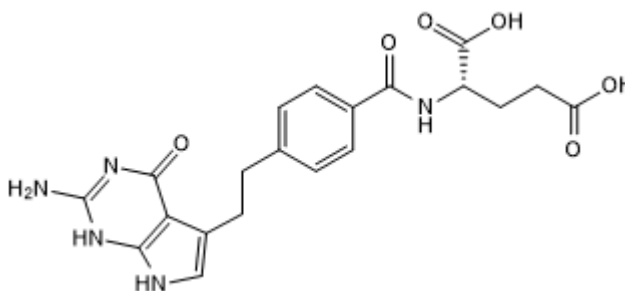
Batch Molecular Weight: 465.286

Physical Appearance: White solid

Solubility: DMSO to 100 mM

Storage: Store at +4°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.8% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	53.33	5.52	15.05
Found	53.37	5.44	14.94

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

Product Name: Pemetrexed

Catalog No.: 6185

Batch No.: 1

CAS Number: 137281-23-3

IUPAC Name: *N*-[4-[2-(2-Amino-4,7-dihydro-4-oxo-3*H*-pyrrolo[2,3-*d*]pyrimidin-5-yl)ethyl]benzoyl]-L-glutamic acid

Description:

High affinity dihydrofolate reductase inhibitor ($K_i = 7$ nM). Also inhibits thymidylate synthase, AICART and glycinamide ribonucleotide formyltransferase (K_i values are 109 nM, and 3.5 μ M and 9.3 μ M, respectively). Indirectly activates AMPK. Inhibits proliferation of cancer cell lines in vitro.

Physical and Chemical Properties:

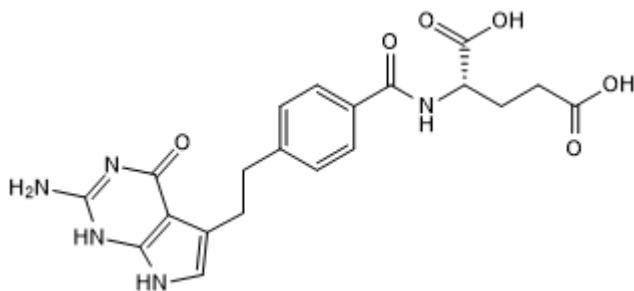
Batch Molecular Formula: $C_{20}H_{21}N_5O_6 \cdot 0.33C_2H_5OH \cdot 1 \frac{1}{4}H_2O$

Batch Molecular Weight: 465.286

Physical Appearance: White solid

Minimum Purity: >98%

Batch Molecular Structure:



Storage: Store at +4°C

Solubility & Usage Info:

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:

Rothbart et al (2010) Pemetrexed indirectly activates the metabolic kinase AMPK in human carcinomas. *Cancer Res.* **70** 10299. PMID: 21159649.

Shih et al (1997) LY231514, a pyrrolo[2,3-*d*]pyrimidine-based antifolate that inhibits multiple folate-requiring enzymes. *Cancer Res.* **57** 1116. PMID: 9067281.

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

bio-techne.com

info@bio-techne.com

techsupport@bio-techne.com

North America

Tel: (800) 343 7475

China

info.cn@bio-techne.com

Tel: +86 (21) 52380373

Europe Middle East Africa

Tel: +44 (0)1235 529449

Rest of World

www.tocris.com/distributors

Tel: +1 612 379 2956