Purdue Bioscience

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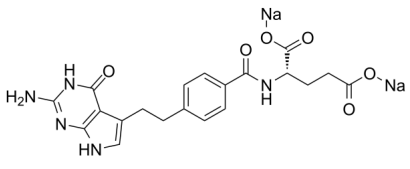
Certificate of Analysis

Catalog Number	BP10598
Product Name	Pemetrexed disodium

Physical and Chemical Properties

Synonyms	LY231514 disodium, LY-231514, Pemetrexed
CAS No.	150399-23-8
Chemical Formula	C20H19N5Na2O6
Molecular Weight	471.381
Solubility	DMSO: 10mM
Storage	Powder: -20°C for 2 years In solvent: -80°C for 1 year
Chemical Structure OR Tested Image	

Product Information

Description	Pemetrexed is a parenterally administered folate antagonist and antineoplastic agent, used in the treatment of non-small cell lung cancer and malignant mesothelioma. Pemetrexed therapy has been associated with moderate rates of serum enzyme elevations during therapy, but has not been convincingly linked to instances of acute, clinically apparent liver injury.
Targets&IC50	GARFT: 65 nM(Ki), TS: 1.3 nM(Ki), DHFR: 7.2 nM(Ki)
In vitro	Dose-response curves are generated to determine the concentration required for 50% inhibition of growth (IC50). Pemetrexed disodium is dissolved initially in DMSO at a concentration of 4 mg/mL and further diluted with cell culture medium to the desired concentration. CCRF-CEM leukemia cells in complete medium are added to 24-well Cluster plates in a total volume of 2.0 mL. Pemetrexed disodium at various concentrations are added to duplicate wells so that the final volume of DMSO is 0.5%. The plates are incubated for 72 hour at 37 °C in an atmosphere of 5% CO2 in air. At the end of the incubation, cell numbers are determined on a ZBI Coulter counter. For several studies, IC50s are determined for each compound in the presence of either 300 μM AICA, 5 μM thymidine, 100 μM hypoxanthine, or combination of 5 μM hymidine plus 100 μM hypoxanthine. For adherent tumor cells, a modification of the original MTT colorimetric assay is used to measure cell cytotoxicity. The human tumor cells are seeded in 100 μL assay medium/well in 96-well flat-bottomed tissue culture plates. The assay medium contains folic acid-free RPMI 1640 supplemented with 10% FCS and either 2 nM folinic acid or 2.3 μM folic acid as the sole folate source. Well 1A is left blank. Stock solutions of antifolates are prepared in Dulbecco's PBS at 1 mg/mL, and a series of 2-fold dilutions are subsequently made in PBS. Ten-μL aliquots of each concentration are added to triplicate wells. Plates are incubated for 72 hours at 37 °C in a humidified atmosphere of 5% CO2-in-air. MTT is dissolved in PBS at 5 mg/mL, 10 μL of stock MTF solution are added to each well of an assay, and the plates are incubated at 37 °C for 2 additional hours. Following incubation, 100 μL of DMSO are added to each well. After thorough formazan solubilization, the plates are read on a Dynatech MR600 reader, using a test wavelength of 570 nm and a reference wavelength of 630 nm.The IC50 is determined as the concentration of drug required to inhibit cell growth by 50% compared to an untreated controls.(Only for Reference)

Analytical Data

HPLC	Shows Min >99% purity

H-NMR	Consistent with structure
Stability and Solubility Advice	Information on product stability, especially in solution, has rarely been reported and in most cases we can only provide a general guideline. We recommend that once the stock solution has been prepared, it be stored in equal quantities in sealed vials and used within 1 month. Avoid repeated freezing and thawing cycles. Storage conditions for some special products should be referred to their storage details.

Purdue Bioscience Inc.

750 50th St, Brooklyn, NY 11220, USA

https://www.purduebio.com

1-877.618.7311

info@purduebio.com

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