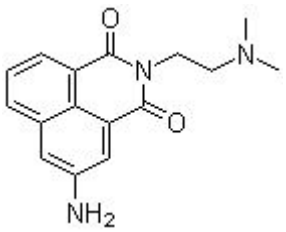
Product Introduction

Amonafide

Amonafide produces protein-associated DNA-strand breaks through a **topoisomerase II**-mediated reaction, but does not produce topoisomerase I-mediated DNA cleavage. Phase 3.

Technical Data:

Molecular Weight (MW):	283.33	
Formula:	$C_{16}H_{17}N_3O_2$	
Solubility (25°C) *** <1 mg/ml means slightly soluble or insoluble:**	DMSO 57 mg/mL	
	Water <1 mg/mL	
	Ethanol 4 mg/mL	
Purity:	>98%	
Storage:	3 years -20℃Powder	
	6 months-80℃in DMSO	
CAS No.:	69408-81-7	

Biological Activity

Through a topoisomerase II-mediated reaction, Amonafide treatment produces DNA single-strand breaks (SSB), double-strand breaks (DSB), and DNA-protein cross-links in human myeloid leukemia cells. Amonafide treatment inhibits conlony formation of the leukemic cell lines and the normal human bone marrow GM-CFC in a dose-dependent manner. Amonafide does not produce topoisomerase I-mediated DNA cleavage even at 100 μM. The m-AMSA-resistant line is less than 2-fold resistant to Amonafide [1] Amonafide interferes with the DNA breakage-reunion activity of mammalian DNA topoisomerase II

resulting in DNA cleavage stimulation. [2] Compared with those of other antitumor drugs, Amonafide-stimulated cleavage intensity patterns are markedly different. Amonafide highly prefers a cytosine, and excludes guanines and thymines instead, at position -1, with lower preference for an adenine at position +1. [3] Topoisomerase II-mediated DNA cleavage induced by Amonafide is affected only slightly (less than 3-fold) by 1 mM ATP, suggeting that Amonafide is an ATP-insensitive topoisomerase II inhibitor in contrast to doxorubicin, etoposide, and mitoxantrone. [4] Amonafide significantly inhibits the growth of HT-29, HeLa, and PC3 cells with IC50 of 4.67 μM, 2.73 μM, and 6.38 μM, respectively. [5] Amonafide is unaffected by P-glycoprotein-mediated efflux, unlike those of the classical topoisomerase II inhibitors (daunorubicin, doxorubicin, idarubicin, etoposide, and mitoxantrone). [6]

References

[1] Andersson BS, et al. Cancer Res, 1987, 47(4), 1040-1044.
[2] Hsiang YH, et al. Mol Pharmacol, 1989, 36(3), 371-376.
[3] De Isabella P, Nucleic Acids Res, 1995, 23(2), 223-229.
[4] Wang H, et al. J Biol Chem, 2001, 276(19), 15990-15995.
[5] Bra?a MF, et al. J Med Chem, 2004, 47(6), 1391-1399.
[6] Chau M, et al. Leuk Res, 2008, 32(3), 465-473.

Note： Products protected by valid patents are not offered for sale in countries where the sale of such products constitutes a patent infringement and its liability is at buyer’s risk. This item is only for R&D purpose not for commercial business in kilos. Buyers should overview the patent issue in their countries.