

Product data sheet



MedKoo Cat#: 571526 Name: Nimustine CAS: 42471-28-3 Chemical Formula: C ₉ H ₁₃ ClN ₆ O ₂ Exact Mass: 272.0789 Molecular Weight: 272.693	
Product supplied as: Powder	
Purity (by HPLC): ≥ 98%	
Shipping conditions: Ambient temperature	
Storage conditions: Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Nimustine is an antineoplastic agent especially effective against malignant brain tumors. It can help overcome tumor drug resistance, especially in combination with other antineoplastic agents or with radiotherapy for the treatment of various neoplasms.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
TBD	TBD	TBD

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.67 mL	18.34 mL	36.67 mL
5 mM	0.73 mL	3.67 mL	7.33 mL
10 mM	0.37 mL	1.83 mL	3.67 mL
50 mM	0.07 mL	0.37 mL	0.73 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

- Kondo N, Takahashi A, Mori E, Noda T, Zdzienicka MZ, Thompson LH, Helleday T, Suzuki M, Kinashi Y, Masunaga S, Ono K, Hasegawa M, Ohnishi T. FANCD1/BRCA2 plays predominant role in the repair of DNA damage induced by ACNU or TMZ. *PLoS One*. 2011 May 9;6(5):e19659. doi: 10.1371/journal.pone.0019659. Erratum in: *PLoS One*. 2011;6(6). doi:10.1371/annotation/c6be24d1-bc23-43b4-ae01-b86dad174069. PMID: 21573016; PMCID: PMC3090409.
- Noda Y, Hayatsu H, Kawazoe Y. Effects of treatment with nimustine (ACNU), a bifunctional alkylating anticancer agent, on cultured resting L1210 cells. *Biol Pharm Bull*. 1998 Apr;21(4):414-7. doi: 10.1248/bpb.21.414. PMID: 9586585.

In vivo study

- Mizushima Y, Kashii T, Nakagawa K, Monno S, Yano S. Effects of granulocyte colony-stimulating factor, interleukin-1 alpha, and interleukin-6 on prolonged myelosuppression induced by nimustine hydrochloride in rats. *J Immunother* (1991). 1992 Aug;12(2):98-104. doi: 10.1097/00002371-199208000-00004. PMID: 1380297.
- Miyagawa S, Ando M, Takao A. Cardiovascular anomalies produced by nimustine hydrochloride in the rat fetus. *Teratology*. 1988 Dec;38(6):553-8. doi: 10.1002/tera.1420380602. PMID: 3238611.

7. Bioactivity

Biological target:

Nimustine is an antineoplastic agent especially effective against malignant brain tumors.

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In vitro activity

Resting L1210 cells were treated with nimustine (ACNU), a bifunctional alkylating anticancer agent, for 2 h in a nutrient-depleted medium. The cells treated with ACNU were functioning normally in all the cell functions examined but were completely devoid of proliferating capacity. These results suggest the possibility that ACNU might impair the proliferative capacity of the resting cell population inside a solid tumor without causing such impairment to the cells of normal organs and tissues composed of intrinsically non-proliferative cells.

Reference: Biol Pharm Bull. 1998 Apr;21(4):414-7. <https://pubmed.ncbi.nlm.nih.gov/9586585/>

In vivo activity

The myelorestorative effects of granulocyte colony-stimulating factor (G-CSF), interleukin-1 alpha (IL-1 alpha) and interleukin-6 (IL-6) were studied in F-344 rats which had been treated with cyclophosphamide (CY), carboplatin (CBDCA), or nimustine hydrochloride (ACNU). Animals treated with ACNU had prolonged myelosuppression. In rats which received multiple doses of ACNU, G-CSF treatment exhibited a beneficial effect on WBC, HB, and PLT levels, the most prominent on the HB value.

Reference: J Immunother (1991). 1992 Aug;12(2):98-104. <https://pubmed.ncbi.nlm.nih.gov/1380297/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.