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**Product Data Sheet**

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Product Name: Procarbazine HCl

Cat. No.: GC11793

**Chemical Properties**

Cas. No. 366-70-1

Chemical Name 4-[(2-methylhydrazinyl)methyl]-N-propan-2-ylbenzamide;hydrochloride

SMILES CC(C)NC(=O)C1=CC=C(C=C1)CNNC.ClFormula  $C_{12}H_{19}N_3O.HCl$  M.Wt 257.76Solubility  $\geq 12.82\text{mg/mL}$  in Water Storage Store at 2-8°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure **Protocol****Cell experiment:**

Following Procarbazine or metabolite treatment, cells are diluted to 50,000/mL in 25-cm<sup>2</sup> culture flasks (10 mL). Every 24 h, a 0.5-mL aliquot is removed, diluted 20-fold in HemataII isotonic diluent, and the cell number determined with a Coulter Model F electronic cell counter. Counts greater than 10,000/0.5 mL are corrected for coincidence. Cells are diluted in fresh culture media when cell density exceeded  $1 \times 10^6/\text{mL}$ . Cultures are maintained until the aggregate cell number approached  $100 \times 10^6/\text{mL}$  and doubling time has returned to 12 h. Cell survival is determined using Equation A, where TD(doubling time for cells of interest) is 12 h[1].

**Caution: Product has not been fully validated for medical applications. For research use only.**

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**Animal  
experiment:**

Mice[2]Male Muta™ Mouse animals (7-8 weeks old) are used after 2 weeks of acclimation. In the first experiment, 18 mice are injected intraperitoneally (i.p.) with 50 mg/kg Procarbazine hydrochloride in 10 mL saline/kg and eight mice are injected with 10 mL saline/kg as the vehicle control. Six treated mice are killed 7, 14, and 28 days after treatment, and four control mice are killed 7 and 28 days after the treatment. Killing is by cervical dislocation[2].

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### References:

- [1]. Erikson JM, et al. Cytotoxicity and DNA damage caused by the azoxy metabolites of procarbazine in L1210 tumor cells. Cancer Res. 1989 Jan 1;49(1):127-33.
- [2]. Suzuki T, et al. Procarbazine genotoxicity in the MutaMouse; strong clastogenicity and organ-specific induction of lacZ mutations. Mutat Res. 1999 Aug 18;444(2):269-81.
- [3]. Weissenberg R, et al. Procarbazine effects on spermatogenesis in golden hamster: a flow cytometric evaluation. Arch Androl. 2002 Mar-Apr;48(2):91-100.

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### Background

Procarbazine Hydrochloride is an alkylating agent, with anticancer activity.

Procarbazine Hydrochloride is an anticancer agent. Procarbazine is not cytotoxic to the L1210 cells which lack cytochrome P-450 or monoamine oxidase activity[1].

Procarbazine Hydrochloride (50 mg/kg, i.p.) causes micronuclei in hematopoietic cells, but does not increase the lacZ mutant frequency (MF) in bone marrow of mice, similar to that in liver, testis, spleen, kidney, and lung. Procarbazine Hydrochloride (50 mg/kg, i.p.) has positive effect on lung, bone marrow, and spleen for carcinogenesis[2]. Procarbazine (450 mg/kg) significantly decreases testicular and epididymal weight and drastically reduces haploid cells and spermatogenic arrest in hamster[3].

### References:

- [1]. Erikson JM, et al. Cytotoxicity and DNA damage caused by the azoxy metabolites of procarbazine in L1210 tumor cells. *Cancer Res.* 1989 Jan 1;49(1):127-33.
- [2]. Suzuki T, et al. Procarbazine genotoxicity in the MutaMouse; strong clastogenicity and organ-specific induction of lacZ mutations. *Mutat Res.* 1999 Aug 18;444(2):269-81.
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