Procarbazine Hydrochloride

Cat. No.: HY-13733  
CAS No.: 366-70-1  
Molecular Formula: C₁₂H₂₀ClN₃O  
Molecular Weight: 257.76  
Target: DNA Alkylator/Crosslinker  
Pathway: Cell Cycle/DNA Damage  
Storage:  
- Powder: -20°C, 3 years or 4°C, 2 years  
- In solvent: -80°C, 6 months or -20°C, 1 month

SOLVENT & SOLUBILITY

In Vitro  
DMSO: ≥ 42 mg/mL (162.94 mM)  
* “≥” means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>Mass (1 mg)</th>
<th>Mass (5 mg)</th>
<th>Mass (10 mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td>3.8796 mL</td>
<td>19.3979 mL</td>
<td>38.7958 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>0.7759 mL</td>
<td>3.8796 mL</td>
<td>7.7592 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.3880 mL</td>
<td>1.9398 mL</td>
<td>3.8796 mL</td>
</tr>
</tbody>
</table>

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description  
Procarbazine Hydrochloride is an alkylating agent, with anticancer activity.

In Vitro  
Procarbazine Hydrochloride is an anticancer agent. Procarbazine is not cytotoxic to the LI 210 cells which lack cytochrome P-450 or monoamine oxidase activity[1].

In Vivo  
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].
### Protocol

#### Cell Assay \[1\]
Following Procarbazine or metabolite treatment, cells are diluted to **50,000/mL** in 25-cm² culture flasks (10 mL). Every 24 h, a 0.5-mL aliquot is removed, diluted 20-fold in Hematall 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 × 10⁶/mL**. Cultures are maintained until the aggregate cell number approached **100 × 10⁶/mL** and doubling time has returned to 12 h. Cell survival is determined using Equation A, where \(T_D\) (doubling time for cells of interest) is 12 h\[1\].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

<table>
<thead>
<tr>
<th>Animal Administration [2]</th>
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<tbody>
<tr>
<td><strong>Mice</strong>[2]</td>
</tr>
<tr>
<td><strong>Male Muta™ Mouse</strong> animals (7-8 weeks old) are used after 2 weeks of acclimation. In the first experiment, 18 mice are injected intraperitoneally (i.p.) with <strong>50 mg/kg Procarbazine hydrochloride</strong> in 10 mL saline/kg and eight mice are injected with <strong>10 mL saline/kg</strong> 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].</td>
</tr>
<tr>
<td>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</td>
</tr>
</tbody>
</table>

### Customer Validation


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### References


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

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