

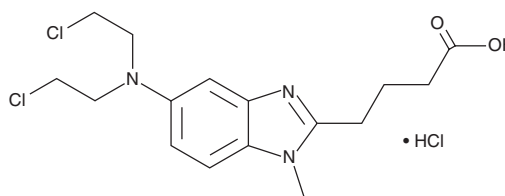
# PRODUCT INFORMATION



## Bendamustine (hydrochloride)

Item No. 23693

**CAS Registry No.:** 3543-75-7  
**Formal Name:** 5-[bis(2-chloroethyl)amino]-1-methyl-1H-benzimidazole-2-butanoic acid, monohydrochloride  
**Synonym:** SDX-105  
**MF:** C<sub>16</sub>H<sub>21</sub>Cl<sub>2</sub>N<sub>3</sub>O<sub>2</sub> • HCl  
**FW:** 394.7  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 235, 329 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Bendamustine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the bendamustine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Bendamustine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. It is also soluble in water. The solubility of bendamustine (hydrochloride) in ethanol and water is approximately 10 mg/ml and approximately 50 mg/ml in methanol and DMSO. We do not recommend storing the aqueous solution for more than one day.

### Description

Bendamustine is a purine analog and DNA alkylating agent.<sup>1</sup> It inhibits growth of SKW-3, Reh, CML-T1, BV-173, and HL-60 leukemia cell lines (IC<sub>50</sub>s = 27.0, 28.6, 15.6, 20.8, and 57.7 μM, respectively) but not MCF-7 and MDA-MB-231 breast cancer cell lines (IC<sub>50</sub>s = >200 and >200 μM, respectively).<sup>2</sup> It kills B cell-chronic lymphocytic leukemia (B-CLL) cells derived from naïve and bendamustine-pretreated patients (LD<sub>50</sub>s = 6.8-8.3 and 3.8-4.9 mg/ml, respectively).<sup>3</sup> Bendamustine (50 mg/kg) inhibits tumor growth by 9% and 96% alone and in combination with ofatumumab, respectively, in a JVM-3 CLL mouse xenograft model.<sup>4</sup> It activates the DNA-damage stress response, the base excision DNA repair pathway, and apoptosis, as well as inhibits mitotic checkpoints and induces mitotic catastrophe.<sup>1</sup> Formulations containing bendamustine have been used to treat CLL and non-Hodgkin lymphoma.

### References

1. Leoni, L.M., Bailey, B., Reifert, J., *et al.* Bendamustine (Treanda) displays a distinct pattern of cytotoxicity and unique mechanistic features compared with other alkylating agents. *Clin. Cancer Res.* **14**(1), 309-317 (2008).
2. Konstantinov, S.M., Kostovski, A., Topashka-Ancheva, M., *et al.* Cytotoxic efficacy of bendamustine in human leukemia and breast cancer cell lines. *J. Cancer Res. Clin. Oncol.* **128**(5), 271-278 (2002).
3. Schwänen, C., Hecker, T., Hübinger, G., *et al.* *In vitro* evaluation of bendamustine induced apoptosis in B-chronic lymphocytic leukemia. *Leukemia* **16**(10), 2096-2105 (2002).
4. Haskova, Z., Whitacre, M.N., Dede, K.A., *et al.* Combination therapy with ofatumumab and bendamustine in xenograft model of chronic lymphocytic leukaemia. *Br. J. Haematol.* **156**(3), 402-404 (2012).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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