



# SZABO SCANDIC

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## Produktinformation



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### SZABO-SCANDIC Handels GmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic)



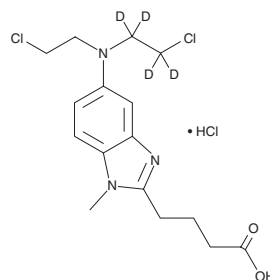
# PRODUCT INFORMATION



## Bendamustine-d<sub>4</sub> (hydrochloride)

Item No. 31316

**Formal Name:** 4-((2-chloroethyl)(2-chloroethyl-1,1,2,2-d<sub>4</sub>)amino)-1-methyl-1H-benzo[d]imidazol-2-yl)butanoic acid, monohydrochloride  
**MF:** C<sub>16</sub>H<sub>17</sub>Cl<sub>2</sub>D<sub>4</sub>N<sub>3</sub>O<sub>2</sub> • HCl  
**FW:** 398.8  
**Chemical Purity:** ≥98% (Bendamustine)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥2 years



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

### Laboratory Procedures

Bendamustine-d<sub>4</sub> (hydrochloride) is intended for use as an internal standard for the quantification of bendamustine (Item No. 23693) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Bendamustine-d<sub>4</sub> (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the bendamustine-d<sub>4</sub> (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Bendamustine-d<sub>4</sub> (hydrochloride) is soluble in methanol and DMSO.

### 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 μM for both).<sup>2</sup> It is cytotoxic to patient-derived lymphocytic leukemia (B-CLL) cells (LD<sub>50</sub>s = 6.8-8.3 mg/ml).<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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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM