Product Data Sheet

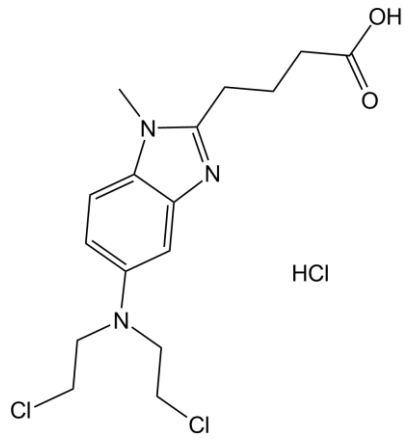
Chemical Properties

Product Name: Bendamustine HCl

Cas No.: 3543-75-7

M.Wt: 394.72

Formula: C16H21Cl2N3O2.HCl



Chemical Name: 4-[5-[bis(2-chloroethyl)amino]-1-methylbenzimidazol-2-yl]butanoic acid;hydrochloride

Canonical SMILES: CN1C2=C(C=C(C=C2)N(CCCl)CCCl)N=C1CCCC(=O)O.Cl

Solubility: >19.7mg/mL in DMSO

Storage: Store at -20°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.

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

Biological Activity

Targets : Apoptosis

Pathways: Apoptosis Inducers

Description:

Bendamustine HCl is an alkylating agent associated with DNA damage with IC50 of 50 μM [1]. It has been reported that bendamustine is activated under DNA damage stress and apoptosis. Bendamustine inhibits mitotic checkpoints and induces mitotic catastrophe by inhibiting several mitosis-related genes such as Polo-like kinase 1, Aurora kinase A, and Cyclin B1 [1]. In myeloma

cell lines, bendamustine induced apoptosis by cleavage of caspase 3, and resulted in G2 cell cycle arrest [2]. In chronic lymphocytic and mantle cell lymphoma cell lines, bendamustine HCL has been shown to activate both the mitochondrial cell death pathway and caspase-dependent apoptosis. Some assays showed that bendamustine exhibited anti-proliferation effects on dexamethasone-sensitive (MM1.S) and -resistant (MM1.R) multiple myeloma cells in a dose-dependent manner, with IC50s of 119.8 μM (MM1.S) and 138 μM (MM1.R), respectively. The apoptosis by activation of caspase-3 and caspase-8 was induced in both MM1.S and MM1.R cell lines [4].

***Reference**:*

[1]. Leoni LM, Bailey B, Reifert J, Bendall HH, Zeller RW, Corbeil J, Elliott G, Niemeyer CC. Bendamustine (Treanda) displays a distinct pattern of cytotoxicity and unique mechanistic features compared with other alkylating agents. Clin Cancer Res. 2008 Jan 1;14(1):309-17.

[2]. Gaul L, Mandl-Weber S, Baumann P, Emmerich B, Schmidmaier R. Bendamustine induces G2 cell cycle arrest and apoptosis in myeloma cells: the role of ATM-Chk2-Cdc25A and ATM-p53-p21-pathways. J Cancer Res Clin Oncol. 2008 Feb;134(2):245-53.

[3]. Roué G, López-Guerra M, Milpied P, Pérez-Galán P, Villamor N, Montserrat E, Campo E, Colomer D. Bendamustine is effective in p53-deficient B-cell neoplasms and requires oxidative stress and caspase-independent signaling. Clin Cancer Res. 2008 Nov 1;14(21):6907-15.

[4]. Cai B, Wang S, Huang J, Lee CK, Gao C, Liu B. Cladribine and bendamustine exhibit inhibitory activity in dexamethasone-sensitive and -resistant multiple myeloma cells. Am J Transl Res. 2013;5(1):36-46.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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