

Product Data Sheet

Product Name: Bortezomib-d15

Cat. No.: GC46942

Chemical Properties

Cas. No. N/A

SMILES CC(C)C[C@H](NC([C@H](CC1=C([2H])C([2H])=C([2H])C([2H])=C1[2H])NC(C2=CN=C(C=N2)=O)=O)B3OB([C@H](CC(C)C)NC([C@H](CC4=C([2H])C([2H])=C([2H])C([2H])=C4[2H])NC(C5=NC=CN=C5)=O)=O)OB([C@H](CC(C)C)NC([C@H](CC6=C([2H])C([2H])=C([2H])C([2H])=C6[2H])NC(C7=CN=CC=N7)=O)=O)O3

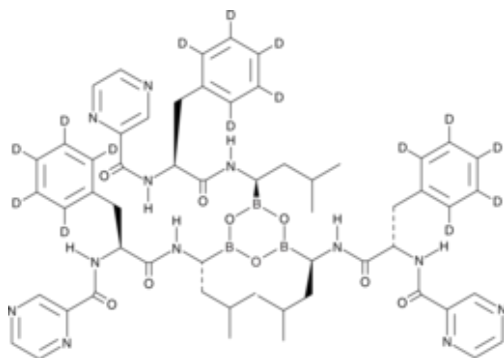
Formula C57H54D15B3N12O9 M.Wt 1113.8

Solubility DMSO: soluble, Methanol: soluble 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.

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

Structure



Background

Bortezomib-d₁₅ is intended for use as an internal standard for the quantification of bortezomib by GC- or LC-MS. When stored as a lyophilized solid, bortezomib exists as a trimeric boronate form but exists as the free boronic acid in solution.¹ Bortezomib is a dipeptide boronic acid derivative that reversibly inhibits the 20S proteasome ($K_i = 0.6$ nM).² It binds the $\beta 5$ -subunit of the 20S proteasome and selectively inhibits chymotryptic activity.^{3,4,5} Bortezomib blocks the degradation of tumor-

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

suppressing and proapoptotic proteins to induce cell cycle arrest and apoptosis in cancer cell lines.^{2,6}

1. Byrn, S.R., Tishmack, P.A., Milton, M.J., et al. Analysis of two commercially available bortezomib products: differences in assay of active agent and impurity profile. *AAPS PharmSciTech* 12(2):461-467(2011)
2. Yamauchi, T., Keating, M.J., and Plunkett, W. UCN-01 (7-hydroxystaurosporine) inhibits DNA repair and increases cytotoxicity in normal lymphocytes and chronic lymphocytic leukemia lymphocytes. *Molecular Cancer Therapeutics* 1:287-294(2002)
3. Lightcap, E.S., McCormack, T.A., Pien, C.S., et al. Proteasome inhibition measurements: Clinical application. *Clinical Chemistry* 46(5):673-683(2000)
4. Adams, J. Development of the proteasome inhibitor PS-341. *The Oncologist* 7:9-16(2002)
5. Dou, Q.P., and Zonder, J.A. Overview of proteasome inhibitor-based anti-cancer therapies: Perspective on bortezomib and second generation proteasome inhibitors versus future generation inhibitors of ubiquitin-proteasome system. *Curr. Cancer Drug Targets* 14(6):517-536(2014)
6. Richardson, P.G., Hideshima, T., and Anderson, K.C. Bortezomib (PS-341): A novel, first-in-class proteasome inhibitor for the treatment of multiple myeloma and other cancers. *Cancer Control* 10(5):361-369(2003)

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA