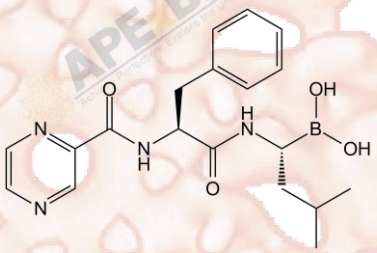
Product Data Sheet

Bortezomib (PS-341)



Cat. No.:	A2614
CAS No.:	179324-69-7
Formula:	C19H25BN4O4
M.Wt:	384.24
Synonyms:	Bortezomib,PS-341,LDP-341,MLM341,MG-341,NSC-681239
Target:	Ubiquitination/ Proteasome
Pathway:	Proteasome
Storage:	Store at -20°C

Solvent & Solubility

In Vitro

insoluble in EtOH; insoluble in H2O; ≥19.21 mg/mL in DMSO

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1mg	5mg	10mg
1 mM	2.6025 mL	13.0127 mL	26.0254 mL
5 mM	0.5205 mL	2.6025 mL	5.2051 mL
10 mM	0.2603 mL	1.3013 mL	2.6025 mL

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

Biological Activity

Shortsummary	Proteasome Inhibitor
IC_{50} & Target	0.6 nM (Ki) (20S proteasome)

In Vitro

Cell Viability Assay

Cell Line:	Canine malignant melanoma cell lines (CMM-1, CMM-2, ChMC, KMeC, LMeC, OMJ, OMS, OMK, and NML
Preparation method：	The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while.Stock solution can be stored below

		-20°C for several months.
	Reacting conditions:	72h; IC50=3.5~5.6 nM (nine kinds of cells)
	Applications:	Bortezomib potently suppressed the growth in 21 drugs, while other compounds had no or minimal effect on cell growth. We thus focused on bortezomib and examined its growth inhibitory properties against nine canine malignant melanoma cell lines (CMM-1, CMM-2, ChMC, KMeC, LMeC, OMJ, OMS, OMK, and NML). Bortezomib inhibited the growth of all cell lines with calculated IC50 values of 3.5~5.6 nM.
In Vivo	**Animal experiment**	
	Animal models:	Nude athymic mice
	Dosage form:	0.8 mg/kg; intravenous injection
	Applications:	The in vivo growth inhibitory activity of bortezomib against CMM-1 cells was evaluated using a xenograft mouse model. Bortezomib significantly suppressed the growth of tumours after Day 4 of treatment ($P < 0.01$, control vs. bortezomib). Tumours from the bortezomib-treated mice showed a significant decrease in mitotic index compared to controls ($P<0.01$). Similarly, the Ki67 index was significantly decreased in tumours excised from the bortezomib-treated mice when compared to controls ($P < 0.01$).
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

1.SemraUnalad, SemaArslanc, et al. "Design and characterization of polycaprolactone-gelatin-graphene oxide scaffolds for drug influence on glioblastoma cells." European Polymer Journal. Volume 115, June 2019, Pages 157-165.

2.Rodriguez-Fernandez IA, Qi Y, et al. "Loss of a proteostatic checkpoint in intestinal stem cells contributes to age-related epithelial dysfunction." Nat Commun. 2019 Mar 5;10(1):1050.PMID:30837466

3.Yuan NN, Cai CZ, et al. "Canthin-6-One Accelerates Alpha-Synuclein Degradation by Enhancing UPS Activity: Drug Target Identification by CRISPR-Cas9 Whole Genome-Wide Screening Technology." Front Pharmacol. 2019 Jan 28;10:16.PMID:30745870

4.Cui-ZanCai, He-FengZhou, et al. "Natural alkaloid harmine promotes degradation of Alpha-synuclein via PKA-mediated ubiquitin-proteasome system activation." Phytomedicine. Available online 30 January 2019, 152842.

5.Ayse Tarbin Jannuzzi, Gulce Sari, et al. "Proteasomal Inhibition with Bortezomib Causes Selective Autophagy Upregulation and Perinuclear Clustering of Mitochondria in Human Neuronal Cells?." Proceedings 2018, 2(25), 1583.

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References

[1] Ito K, Kobayashi M, Kuroki S, et al. The proteasome inhibitor bortezomib inhibits the growth of canine malignant melanoma cells in

vitro and in vivo[J]. The Veterinary Journal, 2013, 198(3): 577-582.

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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