

Product Data Sheet

Product Name: Carfilzomib-d8

Cat. No.: GC47042

Chemical Properties

Cas. No. 1537187-53-3

SMILES O=C([C@]1(C)OC1)[C@H](CC(C)C)NC([C@@H])(NC([C@@H])(NC([C@H](CCC2=CC=CC=C2)NC(CN3C([2H])([2H])C([2H])([2H])OC([2H])([2H])C3([2H])([2H])=O)=O)CC(C)C)=O)CC4=CC=CC=C4)=O

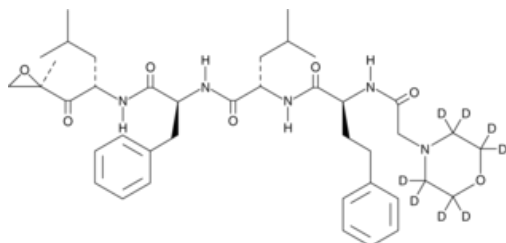
Formula C₄₀H₄₉D₈N₅O₇ M.Wt 728

Solubility DMF: 15 mg/ml, DMSO: 15 mg/ml, Ethanol: 1 mg/ml Storage Store at -20°C

General For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the tips ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

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

Structure



Background

Carfilzomib-d₈ is intended for use as an internal standard for the quantification of carfilzomib by GC- or LC-MS. Carfilzomib is an irreversible proteasome inhibitor classified as a peptide epoxyketone. It targets the chymotrypsin-like $\beta 5$ subunit of the constitutive 20S proteasome ($IC_{50} = 5.2$ nM) and the $\beta 5i$ subunit of the immunoproteasome 20Si (LMP7; $IC_{50} = 14$ nM) with minimal cross reactivity to other proteases.^{1,2} It can induce cell cycle arrest and apoptosis in human cancer cell lines including multiple myeloma, lymphoma, and various solid tumors (IC_{50} s = 2.4-20 nM).^{3,4}

1. Dou, Q.P., and Zonder, J.A. Overview of proteasome inhibitor-based anti-cancer therapies:

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

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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) 2. Zhou, H.J., Aujay, M.A., Bennett, M.K., et al. Design and synthesis of an orally bioavailable and selective peptide epoxyketone proteasome inhibitor (PR-047) *J. Med. Chem.* 52(9)3028-3038(2009) 3. Zhang, W., and Sidhu, S.S. Development of inhibitors in the ubiquitination cascade *FEBS Lett.* 588(2)356-367(2014) 4. Demo, S.D., Kirk, C.J., Aujay, M.A., et al. Antitumor activity of PR-171, a novel irreversible inhibitor of the proteasome *Cancer Res.* 67(13)6383-6391(2007)

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