Carfilzomib
Item No. 17554

CAS Registry No.: 868540-17-4
Formal Name: (αS)-α-[2-(4-morpholinyl)acetyl]-amino]benzenebutanoyl-L-leucyl-N-[(1S)-3-methyl-1-[(2R)-2-methyl-2-oxiranyl]carbonyl][butyl]-L-phenylalaninamide

Synonym: PR-171
MF: C₄₀H₅₇N₅O₇
FW: 719.9
Purity: ≥98%

Stability: ≥2 years at -20°C

Supplied as: A crystalline solid

Laboratory Procedures
For long term storage, we suggest that carfilzomib be stored as supplied at -20°C. It should be stable for at least two years.

Carfilzomib is supplied as a crystalline solid. A stock solution may be made by dissolving the carfilzomib in the solvent of choice. Carfilzomib is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of carfilzomib in ethanol is approximately 1 mg/ml and approximately 15 mg/ml in DMSO and DMF.

Carfilzomib is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Carfilzomib is a second-generation, irreversible, peptide epoxyketone class proteasome inhibitor that targets the chymotrypsin-like β5 subunit of the constitutive 20S proteasome (IC₅₀ = 5.2 nM) and the β5i subunit of the immunoproteasome 20Si (LMP7; IC₅₀ = 14 nM) with minimal cross reactivity to other proteases. It can induce cell cycle arrest and apoptosis in human cancer cell lines including multiple myeloma, lymphoma, and various solid tumors (IC₅₀ = 2.4-20 nM).

References

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