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- Gefahrgutzuschlag
- Expressversand


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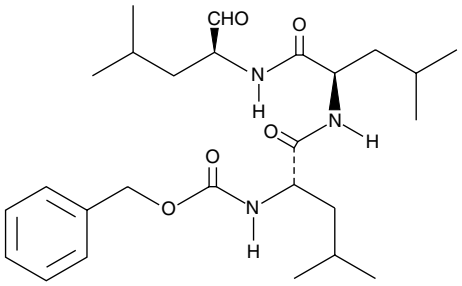
# Product Information

## (R)-MG132

*Item No. 13697*

**CAS Registry No.:** 1211877-36-9
**Formal Name:** N-[(phenylmethoxy) carbonyl]-L-leucyl-N-[(1R)-1-formyl-3-methylbutyl]-L-leucinamide
**MF:** $C_{26}H_{41}N_3O_5$
**FW:** 475.6
**Purity:** ≥98%
**Stability:** ≥2 years at -20°C
**Supplied as:** A crystalline solid




### Laboratory Procedures

For long term storage, we suggest that (R)-MG132 be stored as supplied at -20°C. It should be stable for at least two years.

(R)-MG132 is supplied as a crystalline solid. A stock solution may be made by dissolving the (R)-MG132 in an organic solvent purged with an inert gas. (R)-MG132 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of (R)-MG132 in these solvents is approximately 25 mg/ml.

If aqueous stock solutions are required for biological experiments, they can best be prepared by diluting the organic solvent into aqueous buffers or isotonic saline. Ensure that 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.

The ubiquitin-proteasome pathway plays an integral role in the selective degradation of intracellular proteins. While important for clearing damaged or mis-folded proteins, this proteolytic pathway also regulates the availability of key proteins involved in the control of inflammatory processes, cell cycle regulation, and gene expression.[1,2] (R)-MG132 is a potent, reversible, and cell permeable proteasome inhibitor. After treatment for one hour at 100 nM, it inhibits 50% and 31% of proteasome activity in lysates of J558L multiple myeloma cells and EMT6 breast cancer cells, respectively.[3] The (R)-MG132 stereoisomer is a more effective inhibitor of chymotrypsin-like (ChTL), trypsin-like (TL), and peptidylglutamyl peptide hydrolyzing proteasome (PGPH) activities compared to (S)-MG132 ($IC_{50}$s = 0.22 *versus* 0.89 µM (ChTL); 34.4 *versus* 104.43 µM (TL); 2.95 µ *versus* 5.70 µM (PGPH), respectively).[3]

### References


1. Lee, D.H. and Goldberg, A.L. Proteasome inhibitors: Valuable new tools for cell biologists. *Trends Cell Biol.* **8**, 397-403 (1998).
2. Elliott, P.J., Zollner, T.M., and Boehncke, W.-H. Proteasome inhibition: A new anti-inflammatory strategy. *J. Mol. Med.* **81**, 235-245 (2003).
3. Mroczkiewicz, M., Winkler, K., Nowis, D., *et al.* Studies of the synthesis of all stereoisomers of MG-132 proteasome inhibitors in the tumor targeting approach. *J. Med. Chem.* **53**, 1509-1518 (2010).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