

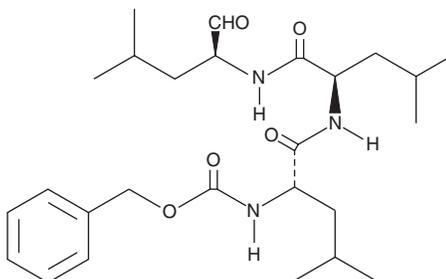
# PRODUCT INFORMATION



## (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<sub>26</sub>H<sub>41</sub>N<sub>3</sub>O<sub>5</sub>  
**FW:** 475.6  
**Purity:** ≥98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

(R)-MG132 is supplied as a crystalline solid. A stock solution may be made by dissolving the (R)-MG132 in the solvent of choice, which should be purged with an inert gas. (R)-MG132 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (R)-MG132 in ethanol is approximately 25 mg/ml and approximately 30 mg/ml in DMSO and DMF.

### Description

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.<sup>1,2</sup> (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.<sup>3</sup> 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<sub>50</sub>s = 0.22 versus 0.89 μM (ChTL); 34.4 versus 104.43 μM (TL); 2.95 versus 5.70 μM (PGPH), respectively).<sup>3</sup>

### References

1. Lee, D.H. and Goldberg, A.L. Proteasome inhibitors: Valuable new tools for cell biologists. *Trends Cell Biol.* **8(10)**, 397-403 (1998).
2. Elliott, P.J., Zollner, T.M., and Boehncke, W.H. Proteasome inhibition: A new anti-inflammatory strategy. *J. Mol. Med. (Berl.)* **81(4)**, 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(4)**, 1509-1518 (2010).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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