

## Product Specification Sheet

**Product Name:** MG132

**Catalog Number:** C6413

**Technical information:**

Chemical Formula:  $C_{26}H_{41}N_3O_5$

CAS #: 133407-82-6

Molecular Weight: 475.62

Purity: > 98%

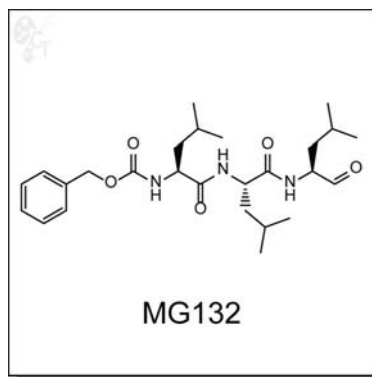
Appearance: White solid

Solubility: Soluble in DMSO up to 100 mM

Chemical Name: benzyl (S)-4-methyl-1-((S)-4-methyl-1-((S)-4-methyl-1-oxopentan-2-ylamino)-1-oxopentan-2-ylamino)-1-oxopentan-2-ylcarbamate

Storage: Store solid powder at 4°C desiccated; Store DMSO solution at -20°C.

Shelf Life: In the unopened package, powder is stable for 1 year and DMSO solution is stable for 6 months under proper storage condition.



- Handling:**
- To make 10 mM stock solution, add 0.21mL of DMSO for each mg of MG132
  - For DMSO solution, briefly spin the vial at 500 rpm in a 50 mL conical tube to ensure maximum sample recovery.

**Biological Activity:** MG-132 is a triterpene, peptide-aldehyde proteasome inhibitor derived from a Chinese medicinal plant. It inhibits 20S proteasome activity by covalently binding to the active site of the beta subunits and effectively blocks the proteolytic activity of the 26S proteasome complex. Through the formation of reactive oxygen species, MG-132 inhibits tumor cell growth by inducing cell cycle arrest and triggering apoptosis. [1]

MG-132 was found to enhance IL-6 expression in HUVEC. MG-132 does not affect I $\kappa$ B levels, suggesting that proteasome inhibition does not influence the NF- $\kappa$ B system without any agonist stimulation. In similar studies, MG-132 is believed to inhibit the degradation of phosphorylated MEK1/2 and activate the downstream region of this signalling cascade. [2]

In NCIH2452 and NCI H2052 human thoracic malignant pleural mesothelioma (MPM) cell lines, it was found that 0.5  $\mu$ M concentrations of MG-132 caused significant apoptosis as evidenced by DNA damage, cleavage of PARP and caspases 3, 7, and 9. [3]

- Reference:**
1. Guo et al., MG132, a proteasome inhibitor, induces apoptosis in tumor cells. *Asia Pac. J. Oncol.* 2012, doi:10.1111/j.1743-7563.2012.01535.x
  2. Shibata et al., Proteasome inhibitor MG-132 enhances the expression of interleukin-6 in human umbilical vein endothelial cells: Involvement of MAP/ERK kinase. *Immunol. Cell Biol.* 2002, 80, 226-230. Pubmed ID: 12067409
  3. Yuan et al., Proteasome Inhibitor MG132 Induces Apoptosis and Inhibits Invasion of Human Malignant Pleural Mesothelioma Cells. *Translational Oncol.* 2008, 1(3), 129-140. Pubmed ID: 18795123

To reorder: <http://www.cellagentech.com/MG132/>

For Technical Support: [technical@cellagentech.com](mailto:technical@cellagentech.com)

*Chemicals are sold for research use only, not for clinical or diagnostic use.*