TOCRIS a bio-techne brand

Print Date: Sep 22nd 2022

Certificate of Analysis

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Product Name: **MG 132** **Catalog No.: 1748** **Batch No.: 12**

CAS Number: 133407-82-6

IUPAC Name: *N*-[(Phenylmethoxy)carbonyl]-L-leucyl-*N*-[(1*S*)-1-formyl-3-methylbutyl]-L-leucinamide

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{26}H_{41}N_3O_5$

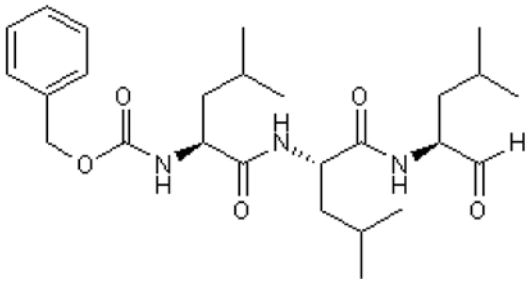
Batch Molecular Weight: 475.63

Physical Appearance: White solid

Solubility: ethanol to 100 mM
DMSO to 100 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 98.6% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	65.66	8.69	8.83
Found	65.57	8.74	8.96

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Description:

MG 132 is a potent cell-permeable inhibitor of proteasome (IC_{50} = 100 nM) and calpain (IC_{50} = 1.2 µM). MG 132 inhibits TNF-α-induced NF-κB activation and IκBα degradation. Induces neurite outgrowth in PC12 cells and has anticancer properties in vitro. MG 132 inhibits SARS-CoV-2 M^{pro} in vitro (IC_{50} = 3.9 µM) and inhibits viral replication. Also enhances adeno-associated viral transduction efficiency of human cell lines by around 50-fold.

Physical and Chemical Properties:

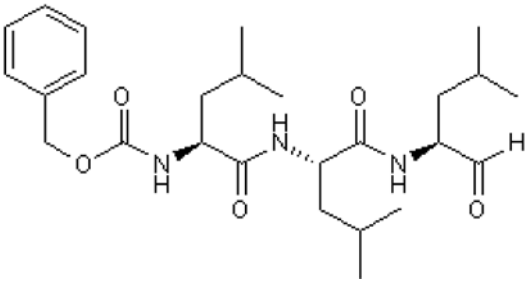
Batch Molecular Formula: $C_{26}H_{41}N_3O_5$

Batch Molecular Weight: 475.63

Physical Appearance: White solid

Minimum Purity: ≥95%

Batch Molecular Structure:



Storage: Store at -20°C

Solubility & Usage Info:

ethanol to 100 mM
DMSO to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Ma *et al* (2020) Boceprevir, GC-376, and calpain inhibitors II, XII inhibit SARS-CoV-2 viral replication by targeting the viral main protease. Cell Res. ***30*** 678. PMID: 32541865.

Banerjee and Liefshitz (2001) Potential of the proteasome inhibitor MG-132 as an anticancer agent, alone and in combination. Anticancer Res. ***21*** 3941. PMID: 11911275.

Douar *et al* (2001) Intracellular trafficking of adeno-associated virus vectors: routing to the late endosomal compartment and proteasome degradation J.Virol. ***75*** 1824. PMID: 11160681.