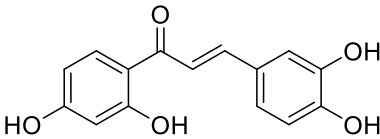


# Product data sheet



MedKoo Cat#: 540053 Name: Butein CAS#: 487-52-5 Chemical Formula: C <sub>15</sub> H <sub>12</sub> O <sub>5</sub> Exact Mass: 272.0685 Molecular Weight: 272.25		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

## 1. Product description:

Butein is found in *Rhuteic verniciflua* and *Butea monosperma*. It induces cell cycle arrest and apoptosis in lung cancer cells, inhibits vessel spouting from aortic rings, and prevents hepatic stellate cell activation.

## 2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

## 3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	36.67	134.69
DMF	25.0	91.83
DMF:PBS (pH 7.2) (1:1)	0.5	1.84
Ethanol	37.5	137.74

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.67 mL	18.37 mL	36.73 mL
5 mM	0.73 mL	3.67 mL	7.35 mL
10 mM	0.37 mL	1.84 mL	3.67 mL
50 mM	0.07 mL	0.37 mL	0.73 mL

## 5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

## 6. Recommended literature which reported protocols for in vitro and in vivo study

### In vitro study

1. Hsu YK, Chen HY, Wu CC, Huang YC, Hsieh CP, Su PF, Huang YF. Butein induces cellular senescence through reactive oxygen species-mediated p53 activation in osteosarcoma U-2 OS cells. *Environ Toxicol.* 2021 May;36(5):773-781. doi: 10.1002/tox.23079. Epub 2020 Dec 16. PMID: 33325610.
2. Abdallah BM, Ali EM. Butein Promotes Lineage Commitment of Bone Marrow-Derived Stem Cells into Osteoblasts via Modulating ERK1/2 Signaling Pathways. *Molecules.* 2020 Apr 18;25(8):1885. doi: 10.3390/molecules25081885. PMID: 32325749; PMCID: PMC7221720.

### In vivo study

1. Ugan RA, Un H. The Protective Roles of Butein on Indomethacin Induced Gastric Ulcer in Mice. *Eurasian J Med.* 2020 Oct;52(3):265-270. doi: 10.5152/eurasianjmed.2020.20022. PMID: 33209079; PMCID: PMC7651756.
2. Farias-Pereira R, Zhang Z, Park CS, Kim D, Kim KH, Park Y. Butein inhibits lipogenesis in *Caenorhabditis elegans*. *Biofactors.* 2020 Sep;46(5):777-787. doi: 10.1002/biof.1667. Epub 2020 Jul 14. PMID: 32663368.

# Product data sheet



## 7. Bioactivity

### Biological target:

Butein is a cAMP-specific PDE inhibitor with an IC<sub>50</sub> of 10.4  $\mu$ M for PDE4.

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### In vitro activity

In the study, this study demonstrated the anti-proliferative effect of butein in human osteosarcoma U-2 OS cells. Data showed that butein significantly suppressed the viability and colony formation ability of U-2 OS cells. Further experiments revealed butein exposure resulted in a cell cycle arrest at S and G2/M phase in U-2 OS cells. Importantly, this study found that butein activated the tumor suppressor p53, and triggered a p53-dependent senescence in U-2 OS cells. Knockdown of p53 suppressed the senescence and rescued the viability in butein-treated U-2 OS cells. Furthermore, this study observed that butein exposure significantly enhanced reactive oxygen species (ROS) levels in U-2 OS cells.

Reference: Environ Toxicol. 2021 May;36(5):773-781. <https://pubmed.ncbi.nlm.nih.gov/33325610/>

### In vivo activity

A total of 42 mice were fasted 24 hours for the ulcer experiment, and 10, 20, and 40 mg/kg doses of butein were evaluated for their antiulcer activity. Butein administration exerted 50.8%, 65.9%, and 87.1% antiulcer effects at 10, 20, and 40 mg/kg, respectively. Butein administration decreased oxidative stress and inflammatory parameters in stomach tissues dose dependently.

Reference: Eurasian J Med. 2020 Oct; 52(3): 265–270. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7651756/>

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*