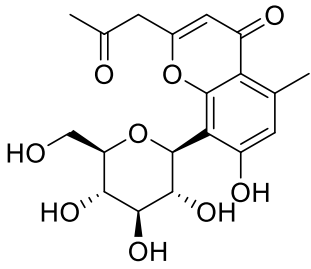


# Product data sheet



MedKoo Cat#: 573110 Name: Aloesin CAS#: 30861-27-9 Chemical Formula: C <sub>19</sub> H <sub>22</sub> O <sub>9</sub> Exact Mass: 394.1264 Molecular Weight: 394.38	
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:

Aloesin is a competitive tyrosinase inhibitor. As an Aloe chromone, Aloesin has previously been formulated with an aloe polysaccharide to give a composition called Loesyn, where it showed significant impact in reducing glycosylated hemoglobin, fasting blood glucose, fructosamine and plasma insulin level in humans. This molecule has also been shown to modulate melanogenesis and have some anti-inflammatory effects in rats.

## 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	122.67	311.05
DMF	20.0	50.71
Ethanol	10.0	25.36
PBS (pH 7.2)	5.0	12.68

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.54 mL	12.68 mL	25.36 mL
5 mM	0.51 mL	2.54 mL	5.07 mL
10 mM	0.25 mL	1.27 mL	2.54 mL
50 mM	0.05 mL	0.25 mL	0.51 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

- Zhang LQ, Lv RW, Qu XD, Chen XJ, Lu HS, Wang Y. Aloesin Suppresses Cell Growth and Metastasis in Ovarian Cancer SKOV3 Cells through the Inhibition of the MAPK Signaling Pathway. *Anal Cell Pathol (Amst)*. 2017;2017:8158254. doi: 10.1155/2017/8158254. Epub 2017 Jun 18. PMID: 28702312; PMCID: PMC5494088.
- Wahedi HM, Jeong M, Chae JK, Do SG, Yoon H, Kim SY. Aloesin from Aloe vera accelerates skin wound healing by modulating MAPK/Rho and Smad signaling pathways in vitro and in vivo. *Phytomedicine*. 2017 May 15;28:19-26. doi: 10.1016/j.phymed.2017.02.005. Epub 2017 Mar 4. PMID: 28478809.

### In vivo study

- Zhang LQ, Lv RW, Qu XD, Chen XJ, Lu HS, Wang Y. Aloesin Suppresses Cell Growth and Metastasis in Ovarian Cancer SKOV3 Cells through the Inhibition of the MAPK Signaling Pathway. *Anal Cell Pathol (Amst)*. 2017;2017:8158254. doi: 10.1155/2017/8158254. Epub 2017 Jun 18. PMID: 28702312; PMCID: PMC5494088.

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2. Wahedi HM, Jeong M, Chae JK, Do SG, Yoon H, Kim SY. Aloesin from Aloe vera accelerates skin wound healing by modulating MAPK/Rho and Smad signaling pathways in vitro and in vivo. *Phytomedicine*. 2017 May 15;28:19-26. doi: 10.1016/j.phymed.2017.02.005. Epub 2017 Mar 4. PMID: 28478809.

## 7. Bioactivity

### Biological target:

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Aloesin (Aloeresin) displays anti-inflammatory activity, ultraviolet protection, and antibacterium effects. Aloesin exerts its anticancer effect through the MAPK signaling pathway.

### In vitro activity

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MTT assay showed that aloesin exhibited a concentration-dependent and time-dependent killing of diverse ovarian cancer cell lines (Figures 1(a) and 1(b)). The SKOV3 cell line was more sensitive to aloesin than other cell lines. Aloesin had a significantly potent toxic effect with an IC<sub>50</sub> value of around 5  $\mu$ M in SKOV3 cell lines. Therefore, SKOV3 cell lines were chosen as the optimal cell models for subsequent functional analyses. SKOV3 cell line was treated with aloesin in dosages ranging from 2.5 to 10  $\mu$ M in vitro. This study adopted the doses 0, 2.5, 5, and 10  $\mu$ M of aloesin and performed colony formation assays. It was visually observed that colonies were smaller in size with increasing doses of aloesin (Figure 1(c)). Quantitative analysis further revealed that colony numbers also decreased with increasing doses of aloesin (Figure 1(d)). Consistently, the average area of a single clone was also decreasingly smaller as the aloesin dose increased (Figure 1(e)). These data suggest that aloesin inhibits ovarian cancer cells growth in a dose- and time-dependent manner.

Reference: *Anal Cell Pathol (Amst)*. 2017; 2017: 8158254. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5494088/>

### In vivo activity

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Hairless mice treated with vehicle showed a slower rate of wound closure and dermal regeneration than did mice treated with different concentrations of aloesin solution over a period of 10 days (Fig. 3A). There were significant differences in wound size between treatment groups from day 4 postinjury onwards (Fig. 3B). Wounds were almost completely closed by day 8 in aloesin-treated mice, whereas the wounds in mice treated with vehicle only were not completely healed until day 8. H&E staining of skin tissue samples at different time points after wound creation also showed faster and better neoeppithelium and granulation tissue formation in aloesin-treated groups compared with vehicle-treated groups (Fig. 3C). Aloesin treatment resulted in generation of dermis and epidermis and reorganization as well as granulation tissue formation significantly faster than did vehicle treatment (Fig. 3D and E).

Reference: *Phytomedicine*. 2017 May 15;28:19-26. <https://pubmed.ncbi.nlm.nih.gov/28478809/>

*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.*