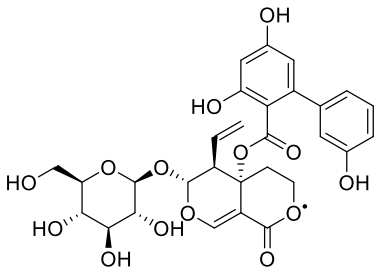
Product data sheet

MedKoo Cat#: 592764 Name: Amarogentin CAS#: 21018-84-8 Chemical Formula: $C_{29}H_{30}O_{14}$• Exact Mass: 602.1636 Molecular Weight: 602.545	
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:
Amarogentin displays immunomodulatory effects in human Mast Cells and Keratinocytes.

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	67.33	111.74
DMF	1.0	1.66
Ethanol	50.0	82.98
PBS (pH 7.2)	0.1	0.17

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	1.66 mL	8.30 mL	16.60 mL
5 mM	0.33 mL	1.66 mL	3.32 mL
10 mM	0.17 mL	0.83 mL	1.66 mL
50 mM	0.03 mL	0.17 mL	0.33 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. Disasa D, Cheng L, Manzoor M, Liu Q, Wang Y, Xiang L, Qi J. Amarogentin from Gentiana rigescens Franch Exhibits Antiaging and Neuroprotective Effects through Antioxidative Stress. Oxid Med Cell Longev. 2020 Aug 1;2020:3184019. doi: 10.1155/2020/3184019. PMID: 32831994; PMCID: PMC7421772.
2. Huang C, Li R, Zhang Y, Gong J. Amarogentin Induces Apoptosis of Liver Cancer Cells via Upregulation of p53 and Downregulation of Human Telomerase Reverse Transcriptase in Mice. Technol Cancer Res Treat. 2017 Oct;16(5):546-558. doi: 10.1177/1533034616657976. Epub 2016 Jul 11. PMID: 27402632; PMCID: PMC5665146.

In vivo study

1. Zhang Y, Zhang Y, Wang J, Gu H. Amarogentin Inhibits Liver Cancer Cell Angiogenesis after Insufficient Radiofrequency Ablation via Affecting Stemness and the p53-Dependent VEGFA/Dll4/Notch1 Pathway. Biomed Res Int. 2020 Oct 20;2020:5391058. doi: 10.1155/2020/5391058. PMID: 33145353; PMCID: PMC7596460.
2. Potunuru UR, Priya KV, Varsha MKNS, Mehta N, Chandel S, Manoj N, Raman T, Ramar M, Gromiha MM, Dixit M. Amarogentin, a secoiridoid glycoside, activates AMP- activated protein kinase (AMPK) to exert beneficial vasculo-metabolic effects. Biochim Biophys Acta Gen Subj. 2019 Aug;1863(8):1270-1282. doi: 10.1016/j.bbagen.2019.05.008. Epub 2019 May 22. PMID: 31125678.

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7. Bioactivity

Biological target:

Amarogentin promotes apoptosis, arrests G2/M cell cycle and downregulates of PI3K/Akt/mTOR signalling pathways.

In vitro activity

The effects of amarogentin on the growth of yeast under oxidative stress induced by 10 mM H_2O_2 are shown in Figure 2(a). The growth of yeast on the agar plate with H_2O_2 in the amarogentin-treated groups was better than negative control and RES-treated groups. To quantify the change induced by amarogentin on oxidative stress, we used another analytical method. The survival rate of yeast under oxidative stress induced by 5.5 mM H_2O_2 in the amarogentin-treated group was significantly increased compared with that in the control group (Figure 2(b)). The effect of amarogentin on antioxidative stress at a concentration of 3 μM is similar to that of RES at a concentration of 10 μM. These results indicate that amarogentin showed antiaging effect by inhibiting oxidative stress.

Reference: Oxid Med Cell Longev. 2020; 2020: 3184019. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7421772/

In vivo activity

The tumor weights and volumes of the iRFA model mice were significantly decreased by amarogentin (Figure 3(a) and Supplementary Figure 2). Consistently, the expression levels of CD133, VEGFA, Dll4, and Notch1 in iRFA tumor tissues were decreased by amarogentin, and phosphorylated p53 levels were increased (Figures 3(b) and 3(c)). Thus, these data implied that amarogentin suppresses liver cancer growth by inhibiting angiogenesis in xenograft mice.

Reference: Biomed Res Int. 2020; 2020: 5391058. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7596460/

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.