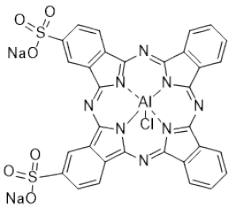
Product data sheet

MedKoo Cat#: 406812 Name: Aluminum phthalocyanine disulfonate disodium CAS#: 68637-19-4 (free acid) Chemical Formula: $C_{32}H_{14}AlClN_8Na_2O_6S_2$ Molecular Weight: 779.0451	
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.



This product is a mixture of adjacent isomers, in which sulfonate group can be in 3- or 4- position in phenyl ring.

One of several regional isomers shown

1. Product description:

Aluminum phthalocyanine disulfonate sodium, also known as AlPcS2 disodium or AlS2Pc or AlPcS(2a), is a potent photosensitizer, and is potentially useful in cancer sonodynamic therapy and cancer photodynamic therapy. Aluminum phthalocyanine disulfonate is a mixture of regional isomers, in which sulfonate group can be in 3- or 4- position in phenyl ring. Aluminum phthalocyanine disulfonate is also a Coloring Agent; Dermatologic Agent; Fluorescent Dye; Indicators and Reagent; Luminescent Agent; Photosensitizing Agent; Radiation-Sensitizing Agent.

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
N/A	N/A	N/A

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.28 mL	6.42 mL	12.84 mL
5 mM	0.26 mL	1.28 mL	2.57 mL
10 mM	0.13 mL	0.64 mL	1.28 mL
50 mM	0.03 mL	0.13 mL	0.26 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. Tang WZ, Cui ZJ. Permanent Photodynamic Activation of the Cholecystokinin 2 Receptor. Biomolecules. 2020 Feb 4;10(2):236. doi: 10.3390/biom10020236. PMID: 32033232; PMCID: PMC7072308.
2. Chizenga EP, Chandran R, Abrahamse H. Photodynamic therapy of cervical cancer by eradication of cervical cancer cells and cervical cancer stem cells. Oncotarget. 2019 Jul 9;10(43):4380-4396. doi: 10.18632/oncotarget.27029. PMID: 31320992; PMCID: PMC6633885.

In vivo study

1. Morais JAV, Almeida LR, Rodrigues MC, Azevedo RB, Muehlmann LA. The induction of immunogenic cell death by photodynamic therapy in B16F10 cells in vitro is effected by the concentration of the photosensitizer. Photodiagnosis Photodyn Ther. 2021 Jun 13;35:102392. doi: 10.1016/j.pdpdt.2021.102392. Epub ahead of print. PMID: 34133961.
2. Longo JP, Lozzi SP, Simioni AR, Morais PC, Tedesco AC, Azevedo RB. Photodynamic therapy with aluminum-chloro-phthalocyanine induces necrosis and vascular damage in mice tongue tumors. J Photochem Photobiol B. 2009 Feb 9;94(2):143-6. doi: 10.1016/j.jphotobiol.2008.11.003. Epub 2008 Nov 21. PMID: 19097802.

7. Bioactivity

Product data sheet

Biological target:

N/A

In vitro activity

As seen in the diagrams, cells in control group 1 that comprised of cells neither treated with AlPcSmix (sulfonated aluminum phthalocyanine mix) nor exposed to light appeared structurally unaltered and retained their characteristic morphology after 24 hours of incubation. The cells appeared healthy and uninjured and actively proliferated to confluence in 24 hours. PDT treated cells on the other hand (AlPcSmix+ irradiation) showed visible structural alteration with increasing level of damage proportional to the increase in PDT doses. Although there was significant cell damage in both cell populations, the side population incurred less damage than the total cell population at similar dose concentrations. There was however observable cell morphology alterations showing cell shrinkage, blebbing and detachment from the plate surface.

Reference: Oncotarget. 2019 Jul 9; 10(43): 4380–4396. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6633885/

In vivo activity

On the one hand, in comparison to control, mice injected with cells treated with PDT mediated by IC50 and IC70 AlPcNE (aluminum phthalocyanine) exhibited a delay in tumor development, which is even comparable to that induced by ICD-positive, MTX-treated cells (Fig. 4B). The increased resistance to tumor development was also reflected in the survival curves, as the mice injected with B16F10 cells treated with MTX or with PDT mediated by IC50 or IC70 AlPcNE showed higher survival rates than mice from the other groups (Fig. 4C-D).

Reference: Photodiagnosis Photodyn Ther. 2021 Jun 13;35:102392. https://pubmed.ncbi.nlm.nih.gov/34133961/

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.