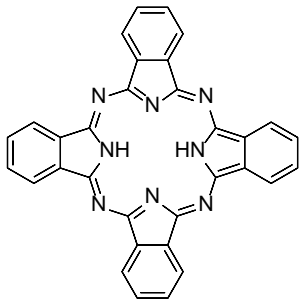


# Product data sheet



MedKoo Cat#: 329457 Name: Phthalocyanine CAS: 574-93-6 Chemical Formula: C <sub>32</sub> H <sub>18</sub> N <sub>8</sub> Exact Mass: 514.1654 Molecular Weight: 514.552	
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:

Phthalocyanine is an intensely blue-green-coloured aromatic macrocyclic compound that is widely used in dyeing. Phthalocyanine can be used as an agent for Photodynamic Therapy and Imaging. Phthalocyanines form coordination complexes with most elements of the periodic table. These complexes are also intensely colored and also are used as dyes or pigments.

## 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
TBD	TBD	TBD

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.94 mL	9.72 mL	19.43 mL
5 mM	0.39 mL	1.94 mL	3.89 mL
10 mM	0.19 mL	0.97 mL	1.94 mL
50 mM	0.04 mL	0.19 mL	0.39 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. Kocaağa N, Türkkol A, Bilgin MD, Erdoğan A. The synthesis of novel water-soluble zinc (II) phthalocyanine based photosensitizers and exploring of photodynamic therapy activities on the PC3 cancer cell line. *Photochem Photobiol Sci.* 2023 May 11. doi: 10.1007/s43630-023-00428-y. Epub ahead of print. PMID: 37166570.

2. Liu S, Ma J, Xue EY, Wang S, Zheng Y, Ng DKP, Wang A, Zheng N. Polymeric Phthalocyanine-Based Nanosensitizers for Enhanced Photodynamic and Sonodynamic Therapies. *Adv Healthc Mater.* 2023 Apr 5:e2300481. doi: 10.1002/adhm.202300481. Epub ahead of print. PMID: 37019442.

### In vivo study

1. Govardhane S, Shende P. Phthalocyanine-based glucose-responsive nanococheleates for dynamic prevention of  $\beta$ -cell damage in diabetes. *J Liposome Res.* 2023 May 12:1-16. doi: 10.1080/08982104.2023.2209642. Epub ahead of print. PMID: 37171277.

2. Feng HY, Yuan Y, Zhang Y, Liu HJ, Dong X, Yang SC, Liu XL, Lai X, Zhu MH, Wang J, Lu Q, Lin Q, Chen HZ, Lovell JF, Sun P, Fang C. Targeted Micellar Phthalocyanine for Lymph Node Metastasis Homing and Photothermal Therapy in an Orthotopic Colorectal Tumor Model. *Nanomicro Lett.* 2021 Jun 19;13(1):145. doi: 10.1007/s40820-021-00666-8. PMID: 34146159; PMCID: PMC8214644.

# Product data sheet



## 7. Bioactivity

### Biological target:

Phthalocyanine is an intensely blue-green-coloured aromatic macrocyclic compound that is widely used in dyeing.

### In vitro activity

The photophysical properties (fluorescence, singlet oxygen and photodegradation quantum yield) of these novel complexes were investigated in dimethylsulfoxide (DMSO) for both non-ionic and quaternized cationic phthalocyanine complexes and in aqueous solution for quaternized cationic phthalocyanine complexes. Studies indicate that the mechanism of BSA quenching by quaternized zinc(II) phthalocyanines was static quenching. Quaternized zinc(II) phthalocyanines interacted with ct-DNA by intercalation. Quaternized zinc(II) phthalocyanines caused a decrease in cell viability and triggered apoptotic cell death after PDT was applied at a concentration that did not have a toxic effect on their own. The results revealed that the synthesized water soluble quaternized zinc(II) phthalocyanine complexes (Q-Zn1c and Q-Zn2c) are promising potential photosensitizers for PDT.

Reference: Photochem Photobiol Sci. 2023 May 11. <https://pubmed.ncbi.nlm.nih.gov/37166570/>

### In vivo activity

The present study aimed to fabricate concanavalin A conjugated phthalocyanine-loaded cochleates (Formulation PhConA) as a glucose-sensitive lipidic system and estimate its efficacy in streptozotocin-induced male Sprague Dawley diabetic rats for 28 days. The in-vivo studies of the formulation PhConA improved the blood glucose levels along with defensive effect on the liver to overcome the hyperlipidemic effect. The rigid structure of cochleates prolongs the drug elimination from systemic circulation and extends its effect for a longer duration by decreasing the blood glucose level. Thus, the glucose-sensitive formulation PhConA showed significant improvement in diabetic rats within the period of 28 days by improving the oxidative defense and protecting the pancreatic  $\beta$ -cells.

Reference: J Liposome Res. 2023 May 12:1-16. <https://pubmed.ncbi.nlm.nih.gov/37171277/>

*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.*