Doubly protected ester prodrug of 5-aminolevulinic acid for enhanced cell uptake and photoinactivation

Hailey S. Sanders, Karolina A. Rooney, Marissa A. Panethiere, Kirk M. Atkinson, Bradley D. Smith

Research Square 2026 Apr. https://doi.org/10.21203/rs.3.rs-9033698/v1

- ultraviolet light
- Photodynamic therapy (PDT)
- cancer
- 5-aminoprephosphate

Liposomal Delivery of Cell Impermeable Phototoxic Ru(II) Complexes

David Cullinane, Karmel Sofia Gkika, Surajit Ghosh, Philip Morgenfurt, Nirod Kumar Sarangi, Amrutha Prabhakaran, Tia E. Keyes

ChemBioChem 2026 March, Volume 27, Issue 6. https://doi.org/10.1002/cbic.202500948

- blue light
- photopharmacology
- Photodynamic therapy (PDT)
- Drug delivery
- Optical switching molecules
- cancer
- Reactive oxygen species

An In Vitro Investigation of 5-Aminolevulinic Acid Mediated Photodynamic Therapy in Bone Sarcoma

Rebecca H Maggs, Marcus J Brookes, Kenneth S Rankin

Oncol Res . 2026 Jan 19;34(2):1. doi: 10.32604/or.2025.069781

- Red light
- Photodynamic therapy (PDT)
- cancer
- 5-aminoprephosphate
- Osteosarcoma

Virus-based IFNγ gene delivery and photodynamic therapy cooperate to remodel the tumor microenvironment and suppress breast cancer

Ksenija Korotkaja, Zhanna Rudevica, Darija Lapina, Dace Skrastina, Juris Jansons, Olga Nilova, Karina Spunde, Anna Zajakina

Mol Ther Oncol . 2026 Jan 3;34(1):201124. doi: 10.1016/j.omton.2025.201124.

- Red light
- Photodynamic therapy (PDT)
- cancer
- Chlorine e6

Harnessing blue light photobiomodulation for cancer therapy: Evidence from a systematic review

Bárbara Evelyn Santos de Lima, Rebeca Barros Nascimento, Ana Paula Mariano Santos Ginez, Maria Stella Moreira, Rebeca Boltes Cecatto, Rodrigo Labat Marcos, Maria Fernanda Setúbal Destro Rodrigues

Photochem Photobiol . 2025 Aug 28. doi: 10.1111/php.70025

- blue light
- Green light
- Red light
- Photodynamic therapy (PDT)
- cancer
- Photobiomodulation (PBM)

Exploring the Phototherapeutic Applications of Mitochondria-Targeted COUPY Photocages of Antitumor Drugs

Marta López-Corrales, Eduardo Izquierdo-García, Manel Bosch, Tapas Das, Amadeu Llebaria, Laia Josa-Culleré, Vicente Marchán

J. Med. Chem. 2025 Apr, 68, 9, 9741-9754 https://doi.org/10.1021/acs.jmedchem.5c00550

- Green light
- Photodynamic therapy (PDT)
- cancer
- Mitochondria
- COUPY

Blue Light Emitting Diode Suppresses Sarcoma Cell Proliferation via the Endogenous Apoptotic Pathway Without Damaging Normal Cells

Shinji Kawaguchi, Toshihiko Nishisho, Shunichi Toki, Makoto Takeuchi, Shunsuke Tamaki, Koichi Sairyo

Cancer Med . 2025 Mar;14(6):e70770. doi: 10.1002/cam4.70770.

- blue light
- Green light
- Red light
- Photodynamic therapy (PDT)
- cancer
- Synovial sarcoma
- Soft tissue sarcoma
- Osteosarcoma
- Photobiomodulation (PBM)

Heat Shock Protein 90 Targeted Radiation Therapy Enhanced with Cherenkov Light photo-Activation

Joseph Abraham Farina

Duke University, 2025

- Near-infrared light
- Photodynamic therapy (PDT)
- Berteporfin
- Heat shock protein

Nanoscale Tools for Biosensing and Treatment of Bacterial Biofilms and Eukaryotic Cells

Charlotte Kromer

Freie Universitat Berlin 2024. doi.org/10.17169/refubium-44048

- Green light
- Photodynamic therapy (PDT)
- Antibiotics
- nanoparticles
- E. coli
- BODIPY
- Antimicrobial photodynamic therapy (a-PDT)
- Caries-causing bacteria and periodontal disease bacteria
- Staphylococcus aureus

Targeting Borrelia burgdorferi HtpG with a berserker molecule, a strategy for anti-microbial development

Dave L Carlson, Mark Kowalewski, Khaldon Bodoor, Adam D Lietzan, Philip F Hughes, David Gooden, David R Loiselle, David Alcorta, Zoey Dingman, Elizabeth A Mueller, Irnov Irnov, Shannon Modla, Tim Chaya, Jeffrey Caplan, Monica Embers, Jennifer C Miller, Christine Jacobs-Wagner, Matthew R Redinbo, Neil Spector, Timothy AJ Haystead

Cell Chem Biol. 2024 Mar 21;31(3):465-476.e12. doi: 10.1016/j.chembiol.2023.10.004.

- Red light
- photopharmacology
- Photodynamic therapy (PDT)
- Berteporfin
- Antibiotics
- Antimicrobial photodynamic therapy (a-PDT)
- Spirochete
- Lyme disease

Phototoxicity of Tridentate Ru(II) Polypyridyl Complex with Expanded Bite Angles toward Mammalian Cells and Multicellular Tumor Spheroids

Inorg. Chem. 2023, 62, 32, 13089–13102, https://doi.org/10.1021/acs.inorgchem.3c01982

- blue light
- Photodynamic therapy (PDT)
- cancer

ROS generating BODIPY loaded nanoparticles for photodynamic eradication of biofilms

Charlotte Kromer, Karin Schwibbert, Sebastian Radunz, Dorothea Thiele, Peter Laux, Andreas Luch, Harald R. Tschiche

Front Microbiol . 2023 Oct 12:14:1274715. doi: 10.3389/fmicb.2023.1274715

- Green light
- Photodynamic therapy (PDT)
- Antibiotics

- nanoparticles
- BODIPY
- Antimicrobial photodynamic therapy (a-PDT)
- Caries-causing bacteria and periodontal disease bacteria
- Staphylococcus aureus

Phonozen-mediated photodynamic therapy comparing two wavelengths in a mouse model of peritoneal carcinomatosis

Hyoung-Il Kim, Sung-Ho Lee, Su-Jin Shin, Jong-Hyun Park, Jae Eun Yu, Sang Won Lee, Seung Hee Yang, Layla Pires & Brian C. Wilson

Photochem. Photobiol. 2023 Aug. DOI:10.1007/s43630-023-00470-wDOI:10.1007/s43630-023-00470-w

- blue light
- Near-infrared light
- Photodynamic therapy (PDT)
- cancer
- Stomach cancer

Enhancing Phototoxicity in BODIPY-Perylene Charge Transfer Dyads by Combined Iodination and Mesylation

Rhianne C Curley, Ruben Arturo Arellano-Reyes, James N McPherson, Vickie McKee, Tia E Keyes

Chemistry . 2024 Dec 18;30(71):e202403149. doi: 10.1002/chem.202403149

- blue light
- Photodynamic therapy (PDT)
- phototoxicity
- BODIPY (fluorescent dye)

Targeting Mitochondrial Guanine Quadruplexes for Photoactivatable Chemotherapy in Hypoxic Environments

Lorcan Holden, Rhianne C Curley, Giuseppe Avella, Conor Long Tia E Keyes

- ultraviolet light
- Photodynamic therapy (PDT)
- phototoxicity
- cancer
- Mitochondria
- Apoptosis

Blue light induces apoptosis and autophagy by promoting ROS-mediated mitochondrial dysfunction in synovial sarcoma

Makoto Takeuchi, Toshihiko Nishisho, Shunichi Toki, Shinji Kawaguchi, Shunsuke Tamaki, Takeshi Oya, Yoshihiro Uto, Toyomasa Katagiri, Koichi Sairyo

Cancer Med . 2023 Feb 1. doi: 10.1002/cam4.5664

- blue light

- Green light
- Red light
- Photodynamic therapy (PDT)
- cancer
- Synovial sarcoma
- Photobiomodulation (PBM)

Targeting Borrelia Burgdorferi HtpG with a Berserker Molecule, A Novel Paradigm for Anti-Microbial Development

David Carlson et al.

SSRN 2023

- Red light
- photopharmacology
- Photodynamic therapy (PDT)
- Reactive oxygen species
- Antibiotics
- Antimicrobial photodynamic therapy (a-PDT)

Sunitinib with photoirradiation-mediated reactive oxygen species generation induces apoptosis of renal cell carcinoma cells

Shinkuro Yamamoto, Taku Nakayama, Hitomi Seki, Chiaki Kawada, Hideo Fukuhara, Takashi Karashima, Shun-Ichiro Ogura, Keiji Inoue

Photodiagnosis Photodyn Ther. 2021 Jun 30;102427. doi: 10.1016/j.pdpdt.2021.102427.

- blue light
- Photodynamic therapy (PDT)
- cancer
- kidney cancer
- Sunitinib

Enhanced lipid metabolism induces the sensitivity of dormant cancer cells to 5-aminolevulinic acid-based photodynamic therapy

Taku Nakayama, Tomonori Sano, Yoshiki Oshimo, Chiaki Kawada, Moe Kasai, Shinkuro Yamamoto, Hideo Fukuhara, Keiji Inoue, Shun-Ichiro Ogura

Sci Rep. 2021 Mar 31;11(1):7290. doi: 10.1038/s41598-021-86886-9.

- Red light
- Photodynamic therapy (PDT)
- cancer
- Dormant cancer
- 5-aminoprephosphate