PROGRESS IN BIOMEDICAL OPTICS AND IMAGING Vol. 19 No. 10

Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy XXVII

David H. Kessel Tayyaba Hasan Editors

27–29 January 2018 San Francisco, California, United States

Sponsored and Published by SPIE

Volume 10476

Proceedings of SPIE 1605-7422, V. 10476

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

The papers in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIEDigitalLibrary.org.

The papers reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from these proceedings:

Author(s), "Title of Paper," in Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy XXVII, edited by David H. Kessel, Tayyaba Hasan, Proceedings of SPIE Vol. 10476 (SPIE, Bellingham, WA, 2018) Seven-digit Article CID Number.

ISSN: 1605-7422 ISSN: 2410-9045 (electronic)

ISBN: 9781510614376 ISBN: 9781510614383 (electronic)

Published by **SPIE** P.O. Box 10, Bellingham, Washington 98227-0010 USA Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445 SPIE.org Copyright © 2018, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 1605-7422/18/\$18.00.

Printed in the United States of America Vm7 i ffUb 5 ggr WUH/gr + Wzi bXYf W/bg/ Zrca GD-9.

Publication of record for individual papers is online in the SPIE Digital Library.



Paper Numbering: Proceedings of SPIE follow an e-First publication model. A unique citation identifier (CID) number is assigned to each article at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

• The first five digits correspond to the SPIE volume number.

• The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc. The CID Number appears on each page of the manuscript.

Contents

v Authors

-

- vii Conference Committee
- ix Introduction

PHOTODYNAMIC THERAPY I

10476 02 **Photodynamic therapy: the role of paraptosis** [10476-1]

PHOTODYNAMIC THERAPY II

10476 08	Efficient <i>in vitro</i> photodynamic inactivation of <i>Candida albicans</i> by repetitive light doses [10476-7]
	PHOTODYNAMIC THERAPY III
10476 09	Nanoparticle-based photodynamic therapy on non-melanoma skin cancer [10476-8]
10476 OA	Light-triggered liposomal cargo delivery platform incorporating photosensitizers and gold nanoparticles for enhanced singlet oxygen generation and increased cytotoxicity [10476-9]
10476 OD	The NPe6 fluorescence measurements by using a fluorescence sensing system for skin photosensitivity risk assessment after photodynamic therapy [10476-12]
	PHOTODYNAMIC THERAPY IV
10476 OF	Light fluence dosimetry in lung-simulating cavities [10476-14]
	PHOTODYNAMIC THERAPY V
10476 OL	A quality assurance program for clinical PDT [10476-20]
	PHOTODYNAMIC THERAPY VII
10476 OP	Non-toxic approach for treatment of breast cancer and its cutaneous metastasis: Capecitabine (Xeloda) enhanced photodynamic therapy in a murine tumor model [10476-24]

10476 OR	Cellular pH and PI3K signaling as determinants of Protoporphyrin IX conversion and ALA PDT response [10476-26]
10476 OS	Low-dose PDT on breast cancer spheroids [10476-27]
10476 OT	High energy photons excited photodynamic cancer therapy in vitro [10476-28]
	PHOTODYNAMIC THERAPY VIII
10476 0V	Reactive oxygen species explicit dosimetry (ROSED) of a type 1 photosensitizer [10476-30]
10476 OW	<i>In vitro</i> evaluation of photodynamic therapy using redox-responsive nanoparticles carrying PpIX [10476-31]
	POSTER SESSION
10476 OX	Photodynamic inactivation of <i>Staphylococcus aureus</i> and <i>Escherichia coli</i> using a new bacteriochlorin as photosensitizer [10476-32]
10476 OY	Determination of optical properties, drug concentration, and tissue oxygenation in human pleural tissue before and after Photofrin-mediated photodynamic therapy [10476-34]
10476 OZ	HSA/PSS coated gold nanorods as thermo-triggered drug delivery vehicles for combined cancer photothermal therapy and chemotherapy [10476-36]
10476 10	Mechanism to preserve phrenic nerve function during photosensitization reaction: drug uptake and photosensitization reaction effect on electric propagation [10476-37]
10476 11	3-compartment talaporfin sodium pharmacokinetic model by optimization using fluorescence measurement data from canine skin to estimate the concentration in interstitial space [10476-38]
10476 12	Photodynamic inactivation using curcuminoids and Photogem on <i>caenorhabditis elegans</i> [10476-39]
10476 13	Influence of different coupling agents on the light-phantom interface [10476-41]
10476 14	Improvement of the light-tissue coupling for better outcome of phototherapies [10476-42]
10476 16	Subcellular localization and photodynamic activity of Photodithazine (glucosamine salt of chlorin e6) in murine melanoma B16-F10: an in vitro and in vivo study [10476-44]
10476 17	Verteporfin heterogeneity in pancreatic adenocarcinoma and the relationship to tumor vasculature and collagen distribution [10476-45]