PROGRESS IN BIOMEDICAL OPTICS AND IMAGING
Vol. 16 No. 7

Mechanisms for Low-Light Therapy X

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7–8 February 2015
San Francisco, California, United States

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SPIE

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Published by
SPIE

Volume 9309

Proceedings of SPIE, 1605-7422, V. 9309

Mechanisms for Low-Light Therapy X, edited by Michael R. Hamblin, James D. Carroll, Praveen Arany,
Proc. of SPIE Vol. 9309, 930901 · © 2015 SPIE · CCC code: 1605-7422/15/$18 · doi: 10.1117/12.2183938

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Please use the following format to cite material from this book:
Author(s), "Title of Paper," in *Mechanisms for Low-Light Therapy X*, edited by Michael R. Hamblin, James D. Carroll, Praveen Arany, Proceedings of SPIE Vol. 9309 (SPIE, Bellingham, WA, 2015) Article CID Number.

ISSN: 1605-7422
ISBN: 9781628413991

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

Printed in the United States of America.

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

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Introduction

This issue of the Proceedings of the Optics & Photonics (SPIE 2015) from conference 9309 'Mechanisms of Low Light Therapy X' had 35 abstracts submitted, of which 27 were podium presentations and 8 were invited as poster presentations. Of these, 24 papers (some collated from multiple presenters) have been submitted as manuscripts broadly based in four categories that represent the meeting's 4 sessions: Reviews and Dosimetery, In Vitro, and Animal or Clinical Studies.

The highlight of this meeting was the wide range of interests and expertise in a rapidly evolving field of low light therapy that is best personified by the acceptance of a scientifically accurate term 'Photobiomodulation' by the National Library of Medicine. A comprehensive review by the organizers of this meeting outlines the current state of the field highlighting exciting new progress in the lab research and clinical applications. A massive problem in the field currently is the inaccuracy of the physical parameters of therapy and this is discussed in a concise review paper in this volume.

A majority of the ongoing investigations examine effects of light based interventions in simplified, in vitro models and this is well represented by the largest number of papers and presentations at this meeting. Among these, special emphasis is placed on lineage differences to light therapy such as distinct effects on dental stem cells, osteoblasts, keratinocytes as well as microorganisms such as bacteria and fungi. These differences are critical for our better understanding to applying light therapy for in vivo and human clinical applications. Demonstrating proof of principle in animal models provides the ability to test a large number of interventional variables as well as examining relevant, in vivo parameters robustly. Studies presented in these proceedings range from the basics of light-tissue interactions to effects in specific pathophysiological processes such as wound healing and diabetes. The final frontier for human clinical use is borne by translation research studies and these proceedings highlight the range of studies being attempted in pain, inflammation and wound healing.

The meeting also had a good number of posters being presented to promote interactions and active discussions in the forum. Overall, it was a very informative and engaging meeting showcasing the growing popularity and utility of light based interventions for human health. Next year promises to bring forth much more excitement and innovations. See you all there!

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James D. Carroll
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