

Mechanisms for Low-Light Therapy X

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Editors

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Contents

v	<i>Authors</i>
vii	<i>Conference Committee</i>
ix	<i>Introduction</i>

SESSION 1 REVIEWS AND DOSIMETRY

9309 02	Low level laser (light) therapy and photobiomodulation: the path forward (Invited Paper) [9309-1]
9309 05	Beam profile measurements for dental phototherapy: the effect of distance, wavelength and tissue thickness [9309-4]

SESSION 2 IN VITRO STUDIES I

9309 06	The effect of UV-Vis to near-infrared light on the biological response of human dental pulp cells [9309-5]
9309 07	Controversial effects of low level laser irradiation on the proliferation of human osteoblasts [9309-7]
9309 08	Biomodulatory effects of laser irradiation on dental pulp cells <i>in vitro</i> [9309-8]
9309 09	Impact of blue LED irradiation on proliferation and gene expression of cultured human keratinocytes [9309-6]

SESSION 3 ANIMAL STUDIES I

9309 0A	Low level light in combination with metabolic modulators for effective therapy (Invited Paper) [9309-9]
9309 0C	Transcranial low-level laser therapy increases memory, learning, neuroprogenitor cells, BDNF and synaptogenesis in mice with traumatic brain injury (Invited Paper) [9309-11]
9309 0D	Optical properties of mice skin for optical therapy relevant wavelengths: influence of gender and pigmentation [9309-12]
9309 0E	Effect of photon energy in collagen generation by interstitial low level laser stimulation [9309-13]

SESSION 4 CLINICAL STUDIES	
9309 0F	To evaluate the safety and efficiency of low level laser therapy (LLLT) in treating decubitus ulcers: a review [9309-14]
9309 0G	Tri-wave laser therapy for spinal cord injury, neuropathic pain management, and restoration of motor function [9309-15]
9309 0J	Assessment of LED (λ 850 \pm 10 nm) phototherapy in the inflammatory process of rat's TMJ induced by carrageenan [9309-18]
9309 0K	LED phototherapy on midpalatal suture after rapid maxilla expansion: a Raman spectroscopic study [9309-19]
SESSION 5 IN VITRO STUDIES II	
9309 0L	Brief review on the effect of low-power laser irradiation on neutrophils with emphasis on emerging fungal infections [9309-28]
9309 0N	Evaluation of the efficacy of photodynamic antimicrobial therapy using a phenothiazine compound and Laser (λ=660nm) on the interface: macrophage vs <i>S. aureus</i> [9309-21]
SESSION 6 ANIMAL STUDIES II	
9309 0P	Far red/near infrared light-induced cardioprotection under normal and diabetic conditions [9309-23]
9309 0Q	Low power laser irradiation stimulates cell proliferation via proliferating cell nuclear antigen and Ki-67 expression during tissue repair [9309-24]
9309 0R	Biostimulative effects of 809 nm diode laser on cutaneous skin wounds [9309-26]
POSTER SESSION	
9309 0V	Low level light promotes the proliferation and differentiation of bone marrow derived mesenchymal stem cells [9309-31]
9309 0X	Effectiveness of antimicrobial photodynamic therapy on <i>Staphylococcus aureus</i> using phenothiazinium dye with red laser [9309-33]
9309 0Y	Prospective study of luminous radiation associated technology photosensitive compounds for treatment of diseases [9309-34]
9309 0Z	Evaluation of the efficacy of photodynamic antimicrobial therapy using a phenothiazine compound and LED (red-orange) on the interface: macrophage vs <i>S. aureus</i> [9309-35]
9309 10	Evaluation of laser photobiomodulation on bone defect in the femur of osteoporotic rats: a Raman spectral study [9309-36]

Authors

Numbers in the index correspond to the last two digits of the six-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first four digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Aciole, Joubert Mateus dos Santos, 10
Agrawal, Tanupriya, 0C
Ahmed, Ambereen, 0F
Ahn, Jin-Chul, 0V
Ak, Ayşe, 07
Almeida, Paulo, 0Y
Arany, Praveen R., 02
Bani, G. M. A. C., 0L
Barbosa, Artur Felipe S., 0K
Baumgardt, Shelley, 0P
Becker, Anja, 09
Bienengraeber, Martin, 0P
Bölükbaşı Ateş, Gamze, 07
Brigagão, M. R. P. L., 0L
Brugnera, Aldo, 0Y
Burger, E., 0L
Cangussu, Maria Cristina T., 0J, 0K
Carroll, James D., 02, 05, 08
Carvalho, Carolina Montagn, 0J
Chariff, Mark D., 0G
Chavasco, J. K., 0L
Choi, Sun-Hyang, 0V
Chung, Phil-Sang, 0V
Churm, James, 06
Cooper, Paul R., 05, 06, 08
de Araújo, Telma M., 0K
de Castro, Isabele Cardoso Vieira, 0J, 0K
de Oliveira, Susana C. P. S., 0N, 0X, 0Y, 0Z
Deana, A. M., 0D
Dong, Tingting, 0A
dos Santos, Jean N., 0J, 0K
Dweep, Harsh, 09
França, C. M., 0D
Garipcan, Bora, 07
Gesteira, Maria F. M., 0Z
Gorecki, Patricia, 06, 08
Gretz, Norbert, 09
Gülsoy, Murat, 07, 0R
Ha, Myungjin, 0E
Habib, Fernando Antonio L., 0K
Hadis, Mohammed A., 05, 06, 08
Hamblin, Michael R., 02, 0A, 0C
Huang, Liyi, 0C
Hwe, Christopher, 0P
Jun, Eunkwon, 0E
Jung, Byungjo, 0E
Keszler, Agnes, 0P
Kim, Dae Yu, 0V
Lee, Sangyeob, 0E
Mahato, Krishna Kishore, 0Q
Malaquias, L. C. C., 0L
Mendes, A. C. S. C., 0L
Milward, Michael R., 05, 06, 08
Monteiro, Juliana S. C., 0N, 0X, 0Y, 0Z
Neves, Bruno Luiz R. C., 10
Olszak, Peter, 0G
Oversluizen, Gerrit, 09
Palin, William M., 05, 06, 08
Park, Jihoon, 0E
Patthoff, Donald, 02
Pinheiro, Antônio L. B., 0J, 0K, 0N, 0X, 0Y, 0Z, 10
Pires de Sousa, Marcelo Victor, 02
Pires-Santos, Gustavo M., 0N, 0X, 0Y, 0Z
Prabhu, Vijendra, 0Q
Radfar, Edalat, 0E
Rao, Bola Sadashiva Satish, 0Q
Rhee, Yun-Hee, 0V
Ribeiro, M. S., 0D
Rosa, Cristiane Becher, 0J, 0K
Sabino, C. P., 0D
Sampaio, Fernando José Pires, 0N, 0X, 0Y, 0Z
Santos, G. B., 0L
Silva, D. F. T., 0D
Silveira, Landulfo, 10
Soares, Luiz Guilherme Pinheiro, 0J, 0K, 10
Solmaz, Hakan, 0R
Sperandio, F. F., 0L
Sticht, Carsten, 09
Tarte, Edward, 06
Ülgen, Yekta, 0R
van Abeelen, Frank A., 09
Vatansever, Fatma, 0C
Verinaud, L. M., 0L
Wu, Mei X., 0A
Xuan, Weijun, 0C
Yoshimura, T. M., 0D
Yüksel, Şahru, 07
Zanin, Fátima Antônia Aparecida, 0N, 0X, 0Y
Zhang, Qi, 0A

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- 5 In Vitro Studies II
Tomas Hode, Immunophotonics, Inc. (United States)
- 6 Animal Studies II
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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 Dosimetry, 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!

**Michael R. Hamblin
James D. Carroll
Praveen Arany**

