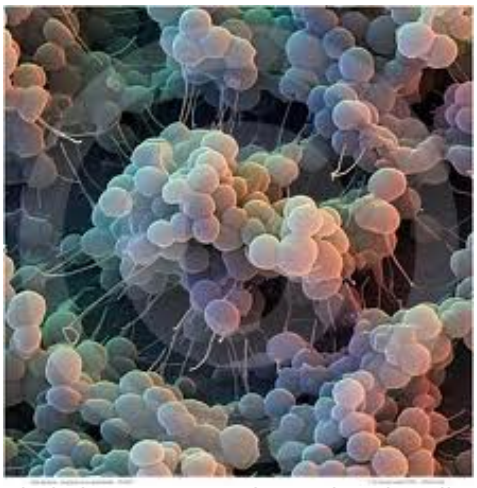
Blue Light Destroys Antibiotic-Resistant Staph Infection



Two common strains of Methicillin-Resistant Staphylococcus Aureus, commonly known as MRSA, were virtually eradicated in the laboratory by exposing them to a wavelength of blue light, in a process called photo-irradiation that is described in a paper published online ahead of print in Photomedicine and Laser Surgery.

The article will appear in the April 2009 issue (Volume 27, Number 2) of the peer-reviewed journal published by Mary Ann Liebert, Inc. The paper is available free online at www.liebertpub.com/pho

Antibiotic-resistant bacterial infections represent an important and increasing public health threat. At present, fewer than 5% of staphylococcal strains are susceptible to penicillin, while approximately 40%-50% of Staph aureus isolated have developed resistance to newer semisynthetic antibiotics such as methicillin as well.

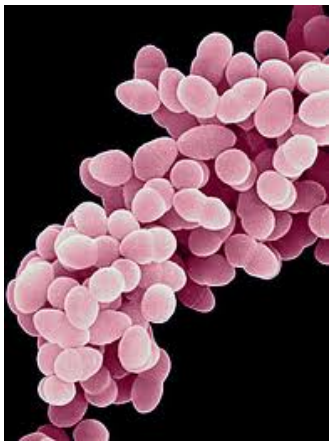
Chukuka S. Enwemeka, Deborah Williams, Sombiri K. Enwemeka, Steve Hollosi, and David Yens from the New York Institute of Technology (Old Westbury, NY) had previously demonstrated that photo-irradiation using 405-nm light destroys MRSA strains grown in culture. In the current study, "Blue 470-nm Light Kills Methicillin-Resistant Staphylococcus aureus (MRSA) in Vitro," the authors exposed bacterial colonies of MRSA to various doses of 470-nm light, which emits no UV radiation.

The two MRSA populations studied—the US-300 strain of CA-MRSA and the IS-853 strain of HA-MRSA— represent prominent community-acquired and hospital-acquired strains, respectively.

The authors report that the higher the dose of 470-nm blue light, the more bacteria were killed. High-dose photo-irradiation was able to destroy 90.4% of the US-300 colonies and the IS- 853 colonie s. The effectiveness of blue light in vitro suggests that it should also be effective in human cases of MRSA infection, and particularly in cutaneous and subcutaneous infections.

"It is inspiring that an inexpensive naturally visible wavelength of light can eradicate two common strains of MRSA. Developing strategies that are capable of destroying MRSA, using mechanisms that would not lead to further antibiotic resistance, is timely and important for us and our patients," says Chukuka S. Enwemeka, PhD, FACSM, Co-Editor-in-Chief of the Journal and first author of the study.

Photomedicine and Laser Surgery is an authoritative peer- reviewed journal published bimonthly in print and online. The Journal provides rapid publication of cutting-edge techniques and research in phototherapy, low level laser therapy (LLLT), and laser medicine and surgery. Reports cover a range of basic and clinical research and procedures in medicine, surgery, and dentistry; they focus on safety issues, new instrumentation, optical diagnostics and activities related to the understanding and applications of biophotonics in medicine. Photomedicine and Laser Surgery is the official journal of the World Association for Laser Therapy (WALT), North American Association for Laser Therapy (NAALT), and International Musculoskeletal Laser Society.



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