

Blue (405 nm) laser abstracts:

Surgical effects on soft tissue produced by a 405-nm violet diode laser in vivo

Miyazaki, H.; Kato, J.; Kawai, S.; Hatayama, H.; Uchida, K.; Otsuki, M.; Tagami, J.; Yokoo, S. Laser Physics, Online First

“The 405-nm diode laser thus proved to be effective for ablating soft tissue with high hemostatic ability at low power.”

Surgical performance of a 405-nm diode laser in treatment of soft tissue

J. Kato, H. Hatayama, H. Miyazaki, G. Akashi, K. Moriya, A. Inoue, Y. Hirai Article first published online: 10 DEC 2007

“The 405-nm diode laser performed well for incising and coagulating soft tissue at a low power density.”

Bactericidal effect of a 405-nm diode laser on *Porphyromonas gingivalis*

Y. Kotoku, J. Kato, G. Akashi, Y. Hirai, K. Ishihara

“The mechanism of the bactericidal effect is photochemical, rather than photothermal. These findings suggest that a 405-nm diode laser has a high bactericidal effect on *P. gingivalis*.”

Blue-Violet Light Emitting Diode (LED) Irradiation Immediately Controls Socket Bleeding Following Tooth Extraction; Clinical and Electron Microscopic Observations

Isao Ishikawa, Tomohiro Okamoto, Seigo Morita, Fumika Shiramizu, Yoshihiro Fuma, Shizuko

“Blue-violet LED irradiation of bleeding sockets caused immediate clot formation and hemostasis. This procedure was safe and reliable and showed no adverse effects.”

Blue-light irradiation regulates proliferation and differentiation in human skin cells.

Liebmann J, Born M, Kolb-Bachofen V. *J Invest Dermatol*. 2010 Jan;130(1):259-69.

“...evidence for a molecular mechanism by which blue light may be effective in treating hyperproliferative skin conditions by reducing proliferation due to the induction of differentiation.”

Effects of blue light irradiation on human dermal fibroblasts

Christian Opländer, Sarah Hidding, Frauke B. Werners, Matthias Born, Norbert Pallua and Christoph V. Suschek

“...results show that blue light at different wavelengths may induce varying degrees of intracellular oxidative stress with different physiological outcome, which could contribute to premature skin photoaging. On the other hand, the use of blue light due to its antiproliferative and toxic properties may represent a new approach in treatment and prevention of keloids, hypertrophic scars and fibrotic skin diseases.”

Effects of combined 405-nm and 880-nm light on *Staphylococcus aureus* and *Pseudomonas aeruginosa* in vitro.

Guffey JS, Wilborn J. *Photomed Laser Surg*. 2006 Dec;24(6):680-3.

“Appropriate doses of combined 405-nm and 880-nm phototherapy can kill *Staphylococcus aureus* and *Pseudomonas aeruginosa* in vitro, suggesting that a similar effect may be produced in clinical cases of bacterial infection.”

Blue 470-nm light kills methicillin-resistant *Staphylococcus aureus* (MRSA) in vitro.

Enwemeka CS, Williams D, Enwemeka SK, Hollosi S, Yens D. *Photomed Laser Surg*. 2009 Apr;27(2):221-6.

“...470-nm blue light kills HA-MRSA and CA-MRSA in vitro, suggesting that a similar bactericidal effect may be attained in human cases of cutaneous and subcutaneous MRSA infections.”