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Real Time Cellular Optical Coherent Images for Laser-Induced Optical Breakdown by 755nm Picosecond Laser with Diffractive Lens Array in a Photoaging Reversal Nude Mice Model

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BACKGROUND

- The safety and efficacy of the 755nm picosecond laser with diffractive lens array is well established for treatment in photoaging patients.
- Laser induced optical breakdowns (LIOBs) is an important mechanism in the revitalizing effects of photoaging treatments.
- This study aims to evaluate the LIOBs after treatment with the 755nm picosecond alexandrite laser and diffractive Focus Lens Array™ (PSAL w/ DLA) utilizing Optical Coherence Tomography (OCT) in nude mice.

| Table 1. Treatment Parameters | |
|-------------------------------|-------------------------|
| Wavelength | 755 nm |
| Spot size | 6 mm |
| Treatment area | 2.5 x 3 cm ² |
| Pulses | 500 pulses |

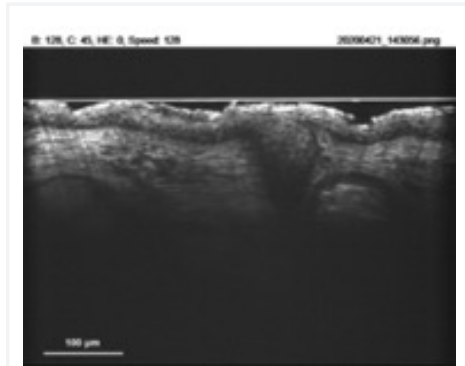
METHODS

- 8-week old (22-26 grams) BALB/c nude mice were treated with the picosecond alexandrite laser with Diffractive Focus Lens Array for 3 days.
- Dorsal skin was observed via Optical Coherence Tomography pre and post treatment.

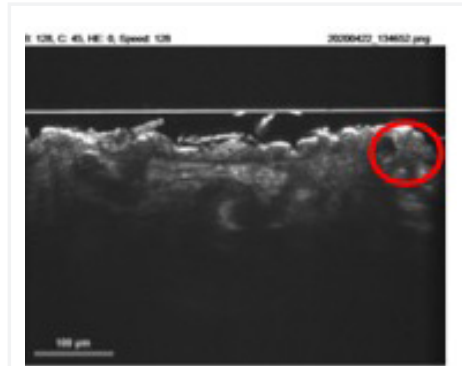


RESULTS

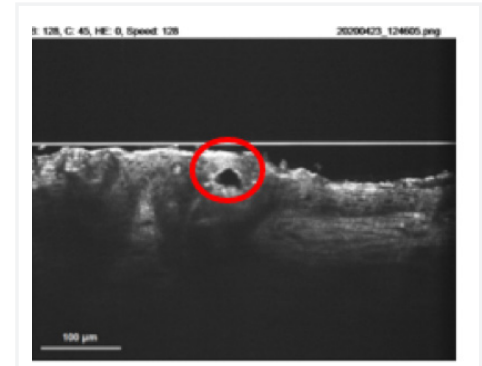
Before and after imaging demonstrating LIOBs as soon as 30 minutes post treatment.



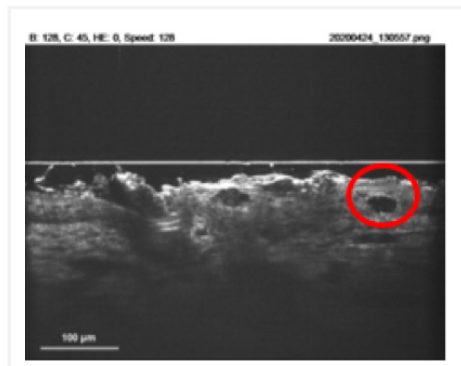
Before 1st PicoSure laser Treatment



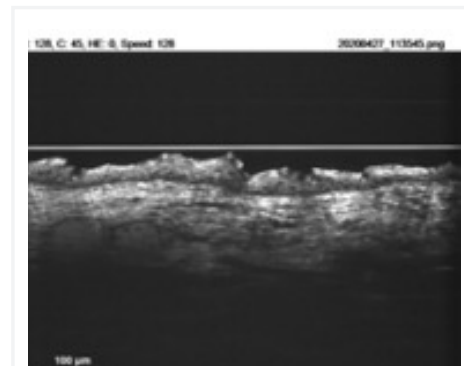
After 1st PicoSure laser 500 pulses Treatment - 1 hr



After 2nd PicoSure laser 500 pulses Treatment - 30 mins



After 3rd PicoSure laser 500 pulses Treatment - 30 mins



After 3rd PicoSure laser 500 pulses Treatment - 72 hr

CONCLUSION

- Picosecond laser with DLA enhances photoaging reversal in nude mice model.
- OCT provides realtime dynamic cellular images for photoaging induction-reversal cycle.