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Title:	Laser Refractive Surgery Using the Solid-State 213 nm Laser for Less Cell Proliferation and Migration with a 193 nm Excimer Laser
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Purpose:	To establish safety and superiority of the Solid State 213nm Refractive Laser over the conventional 193nm Refractive Excimer Laser.
Methods:	New Zealand white rabbits (In groups of 3 to 5) underwent Photo Refractive Keratectomy (PRK). Treatment planned for -5.00 Diopter (D) spherical with 6.5 mm optical zone and 7 mm transitional zone. All rabbits were sacrificed at 1 or 3 days after surgery. Corneas were dissected and fixed. Sections were stained with TUNEL (Promega Dead End TUNEL labeling kit) and counterstained with propidium iodide. Photographs of the sections were taken with a fluorescence microscope. TUNEL positive cells and total cells were counted in each photograph. Values were analyzed using Statview and Bonferroni/Dunn Post Hoc Test.
Results:	No difference in the number of apoptotic cells detected at 1 and 3 days. At 3 days greater numbers of live cells were detected in the crater of the 193nm lasered corneas compared to the 213 nm lasered corneas.
Conclusion:	Results demonstrate that the 213nm Solid State laser has similar cell death inducing properties, but causes less keratocyte proliferation/migration, to the currently used 193nm Excimer laser, therefore making it a potentially superior tool for refractive surgery.