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### Selective ablation of ocular cancer cells and cancer stem cells with Cold atmospheric plasma

Cold atmospheric plasma (CAP) activates pro-apoptotic signaling pathways triggered through redox potential in cancer cells leading to and decreased cell survival. We hypothesize that CAP may have a dramatic effect on these apoptotic pathways in cancer and cancer stem cells (CSC) and thereby reducing the application of chemotherapeutics. The present study aims at identifying newer targets and pathways that are involved in the down regulation of retinoblastoma and other CSC's, cancer cell lines Canady Hybrid Plasma scalpels to address some of these important questions in plasma medicine and cancer therapeutics. Quantitative Confocal Microscopy, Q-PCR, Immunoblots for Nf-Kb mediated and apoptotic pathways, analysis of stem cell signaling via Beta-catenin using TIRF microscopy are some of the methods used in the current study. On the basis of the background literature and our preliminary results we hypothesize that CAP has a selective mechanism to ablate the CSCs. The outcome of the current study will enable cancer researchers to develop newer strategies along with CAP in the treatment of cancer.

### Biography

Arpitha Parthasarathy completed her PhD in Biomedical Sciences from Aravind Eye Hospitals, India and Postdoc from National Institutes of health, Maryland. She had her short Postdoctoral stints at GWU and University. She has published in many peer reviewed ophthalmic journals and is now the "Director of Translational and Molecular Biology Research" at Plasma Medicine Life Sciences and heads the Translational and Molecular Biology Division of Jerome Canady Research Institute for advanced Biological and Technical Sciences, USA.

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