Laser Immunotherapy: A novel therapeutic cancer vaccine

Lasers have been used in cancer medicine since the early 60’s, either as a strictly surgical tool, or as a means to induce biological responses (alone or in combination with a drug). Immunophotonics Inc. is a Columbia-based company that has developed Laser-Assisted Immunotherapy (LIT), an in situ therapeutic cancer vaccine that uses whole tumor cells as the sources of antigens to induce an immune response against the cancer. The two principles underlying LIT are (1) local heating of the primary tumor with a laser to devitalize the tumor and liberate tumor antigens, and (2) local injection of a drug that interacts with the liberated tumor antigens to induce an immune response against the cancer. The procedure is easy to perform, is entirely nontoxic, and in contrast to other therapeutic cancer vaccines, no ex vivo preparation is required. Current human pilot trials using LIT on late stage metastatic breast cancer patients are yielding very promising initial results, with an overall response rate of 70% and several patients already in clinical remission.

Dr. Hode, Chairman, CEO and co-founder of Immunophotonics Inc, has worked in the photomedicine and medical laser device industry since 1994, and the biotech industry since 2007. In parallel with his work in the industry he received a PhD in 2005 in the fields of astrobiology, planetary science and nuclear physics at Stockholm University, after which he took a position as a Research Associate at Portland State University. In 2007 Dr. Hode returned to industry and founded Immunophotonics together with a cancer research group in Oklahoma, but kept his ties to academia through a courtesy position as an Associate Research Professor at Portland State University, and more recently as a Visiting Scientist at SP Technical Research Institute of Sweden, Section of Medical Devices at the Chemistry and Materials Technology Department.