Optical technology helps surgeons see cancer tissue

OnTarget Laboratories LLC has teamed with partners in academia to test a novel optical imaging technology developed at Purdue Univ. that could help surgeons see cancer tissue during surgery.

The technology, developed by Philip Low, the Ralph C. Corley Distinguished Professor of Chemistry at Purdue, is based on the over-expression of specific receptors on solid cancerous tumors and enables illumination of the tumor tissue during surgery.

OnTarget Laboratories has developed small molecule ligands specific for these receptors and attached them to proprietary fluorescent imaging agents. It is anticipated that the tumor-targeted fluorescent dyes will help surgeons remove more of the tumor than would have been otherwise possible. Data from the initial use of this technology in humans was published in Nature Medicine in October 2011.

The collaboration between the Perelman School of Medicine at the Univ. of Pennsylvania and Purdue will enable surgeons across various specialties to test these probes in surgeries of breast cancer, lung cancer, ovarian cancer and renal cancer. These initial studies, if successful, could lead to more pivotal studies and thereby eventually benefit many patients with cancer.

Dr. Sunil Singhal is the principal investigator for the trial at Penn.

"Our patients look for the best options for the treatment of their cancers. If we are able to see cancer better during surgery and remove more of the tumor without endangering the patient, there is likely to be significant benefit to the patient. Given that the ligands target specific receptors that are over-expressed on tumors, we hope to better differentiate normal from cancer tissue, and thereby remove more of the malignant disease," he said. "I will be working with my colleagues to test and hopefully improve this technology in the operating room."

Low said he and his colleagues are excited about the collaboration.

"This collaboration will help translate our technology from bench to bedside," he said. "Surgery is the bedrock for the treatment of most solid tumors, and our developing technology could help the intra-operative visualization of most such tumors in the future."

OnTarget Laboratories is based in the Purdue Research Park of West Lafayette.

OnTarget Laboratories LLC [1]

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