

## 5<sup>th</sup> World Congress on **Cancer Therapy**

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### **Identifying the border of cutaneous squamous cell carcinoma by targeted EGFR antibodies conjugated to gold nanoparticles**

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Intraoperative detection of residual disease in skin cancer has the potential to reduce the rate of recurrence and reduce morbidity.

The aim of the present study is to evaluate the ability and sensitivity of a new method of detection tumor margins, using diffusion reflection (DR) spectroscopy measurements of bio-conjugated gold nanoparticles (GNPs) to cancerous sites in human cutaneous squamous cell carcinoma (SCC). The use of anti-epithelial growth factor receptor antibodies conjugated to the GNPs enable to detect the tumor areas by hyperspectral spectroscopy and DR measurements in pathological specimens of human SCC.

The DR measurements detect absorption differences between the GNPs targeted cancerous tissue and normal, noncancerous tissue. The detection results were compared with standard histopathology: Infiltration of GNPs was detected in all of the tumor samples that were examined. A significant difference was detected between the normal and tumor area (t test,  $p < 0.05$ ).

The suggested method enables discrimination between cancerous and noncancerous tissues due to the intense light absorption of the GNPs, which are selectively targeted to the SCC cells.

The results demonstrate the potential of the direct DR scanning as a new and simple tool for detecting residual disease intraoperatively. This noninvasive and nonionizing optical detection method provides a sensitive, simple, and inexpensive tool for cancer detection.

#### **Biography**

Olshinka completed his medical degree from the Hebrew university and the Haddassah school of medicine in Jerusalem. Olshinka did his Plastic Surgery residency at the Rabin Medical Center and he is now a board certified plastic surgeon. He is working on his Gold Nanoparticles research at the Faculty of Engineering and Institute of Nanotechnology and Advanced Materials in the Bar Ilan University, and awarded the 2015 scholarship of excellence for young researcher.

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