AbstractID: 1855 Title: Optical Imaging of Tumors Using Near-Infrared Fluorescent Probes

Early detection of small primary tumors is crucial for the success of cancer therapy and improves survival rates. A number of target-specific near-infrared imaging probes have recently been developed to image receptors, antigens and enzymes. In our studies we demonstrated 1) the ability to visualize folate receptor-expressing cancer tissues in various peritoneal and subcutaneous murine tumor models following intravenous administration of a Cy-7-folate conjugate, and 2) the possibility to image subcutaneous solid tumors based on higher glucose metabolism using a Cy7-2 deoxyglucose conjugate. We used the Palomar imaging system (Spectros Corp.) that allowed image acquisition in real time and in room light. Images of normal tissue show no fluorescence, whereas images of tumors display bright fluorescence that can be distinguished from the surrounding normal tissue without further image processing or enhancement. These results indicate that both near infrared fluorochromes can be used for improved detection of tumors. Therefore these techniques in conjugation with the Palomar imaging system could find application in the localization and resection of tumor tissue during surgery or in the enhanced endoscopic detection and staging of tumors.

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