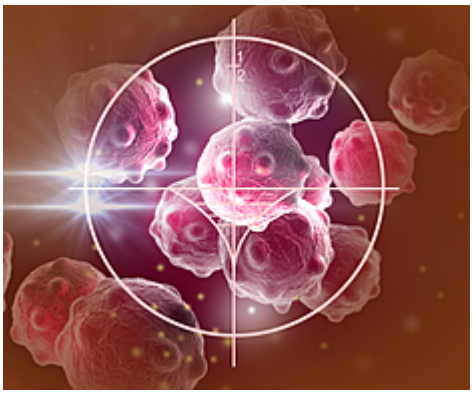
INNOVATION PARTNERSHIPS
UNIVERSITY OF MICHIGAN

The Use of Photoacoustics to Image the Intraocular Tumors

TECHNOLOGY NUMBER: 7029



Technology ID
7029

Category
Chemical Processes and Synthesis
Life Sciences

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Overview

- Uses photoacoustic effects of ultrasound to detect intraocular tumors
- Provides functional and histochemical information that current imaging techniques do not, and does so more cost-effectively

BACKGROUND

Intraocular tumors can be life-threatening and require accurate diagnosis. These tumors can arise from various structures within the eye, such as the retina, choroid, iris, ciliary body, or optic nerve. Current technology can provide a detailed structural view of the eye, but is limited in providing functional information, such as what types of cells or chemicals are inside the eye. The disclosed technology is an imaging technique that not only offers detailed structural images of tumors in the eye, but also differentiates between healthy and cancerous tissue via a safe, non-invasive approach. Since the disclosed technology uses ultrasound equipment, it has the potential to be drastically less expensive and more compact than current functional imaging approaches.

INNOVATION

Researchers have discovered an approach that offers several advantages over competing technologies for cancer detection within the eye, one of which is that it is non-invasive, compared to methods that involve a biopsy. Another is that the disclosed technology uses

ultrasounds, by taking advantage of the photoacoustic effect, which offers the ability to image deep in the tissue with the potential to be drastically less expensive than imaging techniques that involve radiation, such as Computerized Tomography using X-rays, or super powerful magnets, such as Magnetic Resonance Imaging. Compared to traditional ultrasound imaging, the disclosed technology is able to provide chemical functional information, which is crucial for cancer diagnosis, in addition to anatomical information. The disclosed technology also evaluates greater tissue depths than Optical Coherence Tomography.

PATENT

Number: 16/304,805