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DYE CARRIER FOR DIAGNOSTIC IMAGING OF BODY TISSUES

DIAGNOSTICS

Dye carrier to facilitate fluorescence imaging of tissues *in vivo* for minimally invasive diagnosis, surgical procedures, and monitoring of disease progression.

TECHNOLOGY TYPE

Imaging
Medical Devices
Instrumentation

STAGE OF DEVELOPMENT

Proof of concept demonstrated through testing in cardiac tissues.

IP PROTECTION

Nationalized PCT Pending in the United States. Issued in Europe

Devices and Systems for Fluorescence Imaging of Tissue
WO2013109957

Nationalized PCT Issued in the United States and Europe

Dye Application for Confocal Imaging of Cellular Microstructure
US8620409B2

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Reference Numbers:
U-4414, U-5266

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TECHNOLOGY SUMMARY

Fluorescence microscopy enables the study of molecular and morphologic changes in biological specimens with micrometer resolution, providing valuable diagnostic information. Fluorescence microscopy is difficult to use for examination of living tissue, however, because of the need for close association between microscope instrumentation and the imaged tissue, as well as the high concentration of fluorescent dyes required for microscopy.

A disposal dye carrier attached to imaging instruments allows physicians to diagnose tissue without extracting tissue from the body. The carrier consists of a foam-hydrogel composite filled with fluorescent dye. The carrier releases the dye to diffuse throughout the tissue to a depth of 1 mm. Dye release is controlled by the composition of the carrier. The carriers are designed to be used with *in vivo* imaging instruments which send and receive light to and from the dye to enable live tissue imaging during diagnostic and surgical procedures. The images provide clinicians with a map of the tissue microstructure.

FEATURES AND BENEFITS

- Facilitates *in vivo* imaging of tissue microstructure for diagnosis, disease monitoring, and research.
- Improves signal-to-noise ratio of fluorescence microscopy.
- Enables minimally-invasive imaging of tissue.
- Enhances treatment plans and improves patient outcomes by providing clinicians with more information regarding the disease.

RECENT PUBLICATIONS

Huang, C., Kaza, A.K., Hitchcock, R.W., Sachse, F.B. (2014). Local delivery of fluorescent dye for fiber-optics confocal microscopy of the living heart. *Frontiers in Physiology*. doi: [10.3389/fphys.2014.00367](https://doi.org/10.3389/fphys.2014.00367)

INVENTOR PROFILE

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