GEORGE MASON UNIVERSITY

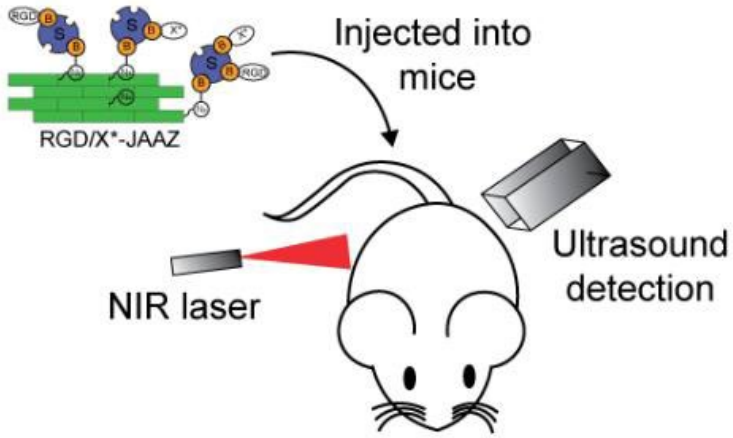
SELF-ASSEMBLING NEAR-INFRARED (NIR) PHOTOACOUSTIC PROBE

GMU-21-042

ILLUMINATE THE UNSEEN: PRECISION IMAGING WITH TARGETED J-AGGREGATES

Mason's cutting-edge J-aggregate-based imaging technology revolutionizes non-invasive photoacoustic imaging (PAI). Indocyanine Green (ICG) J-aggregates, are used to provide a targeted, biocompatible, and highly stable solution for deep-tissue molecular imaging. This technology offers unmatched photoacoustic signal strength and functionalization flexibility for a wide range of applications, including tumor detection and vascular imaging.

- **Enhanced Imaging Depth:** Utilizes NIR J-Aggregates, enabling deep tissue imaging by reducing photon scattering
- **High Stability & Sensitivity:** J-aggregates provide enhanced photothermal stability and a stronger photoacoustic signal than traditional agents
- **Targeted Functionalization:** Capable of binding to biomolecules like peptides or antibodies, allowing precise targeting of pathological tissues
- **Cost-Effective & Scalable:** Streamlined synthesis process eliminates the need for complex nanocarriers, making production scalable and affordable
- **Biocompatibility:** Built on FDA-approved ICG dye, ensuring safety for clinical applications



Application of J-aggregate in non-invasive imaging

J-aggregate particles functionalized with a targeting molecule introduced in mice actively targets diseased tissue. NIR laser focused on the diseased tissue generates ultrasound pulses that are detected to create a photoacoustic image.

For More Information contact:
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