

Methods for Tracing Gold Nanoparticles

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Nanoparticles are becoming ubiquitous in our daily lives



Among them Gold Nanoparticles potential uses and interest are the highest



They are highly variable:

- In Composition (Au only, Si covered by Au...)
- In Size: ranging from 5 to 500nm
- In Geometry: nanorods, nanospheres...
- In coatings: Dextran, PEG, Biotin...
- In Conjugates: DNA, Proteins, Antibodies...
- In function: Drug, Drug Delivery System, Biomarkers, Catalysts, Probes...

However when asked about its risks, toxicity
or long term effects...



Hence the problems:

- Strict and limiting regulations
- Sketicism and Distrust
- Uncharted territory

WE NEED TO KNOW MORE

WE NEED NEW TOOLS TO GAIN THAT KNOWLEDGE

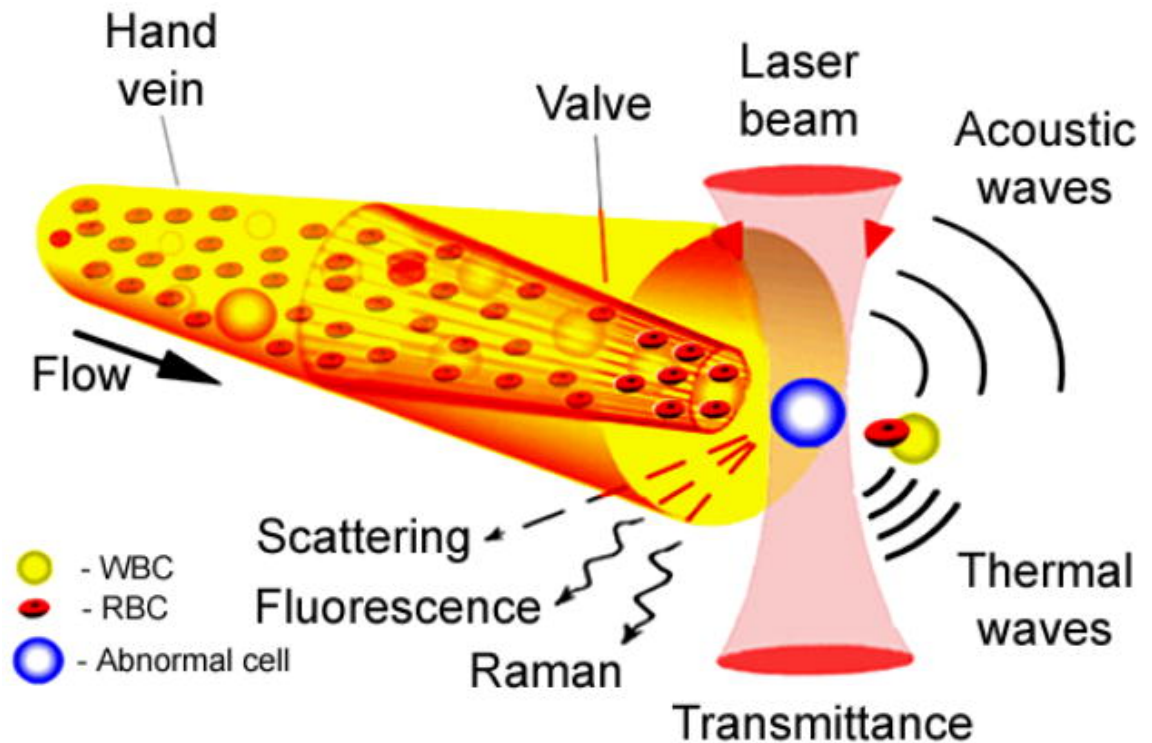
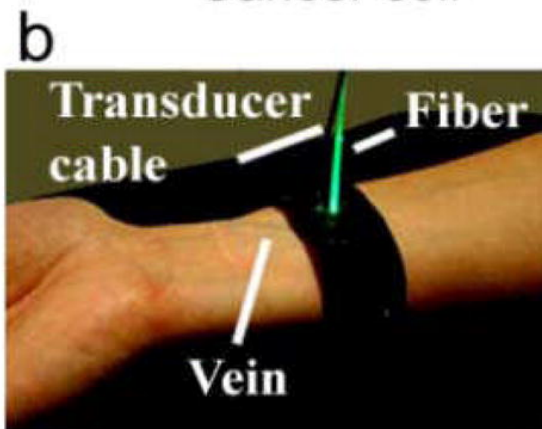
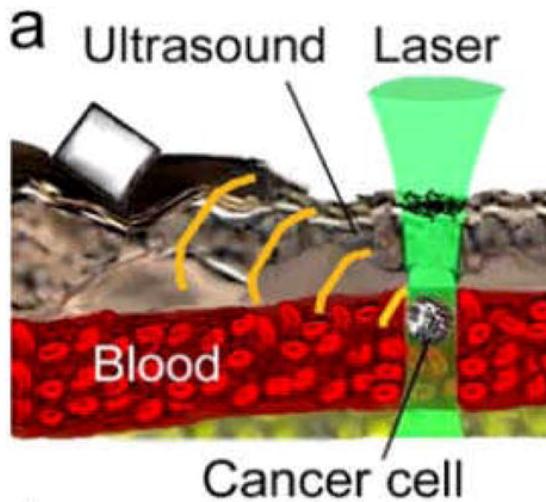
Luckily Au NGs have many properties:

- Specific absorption/emission light spectrum
- Fluorescence
- Tunability
- Thermal, Mechanical, Electromagnetic, Chemical properties
- Biologic Activity

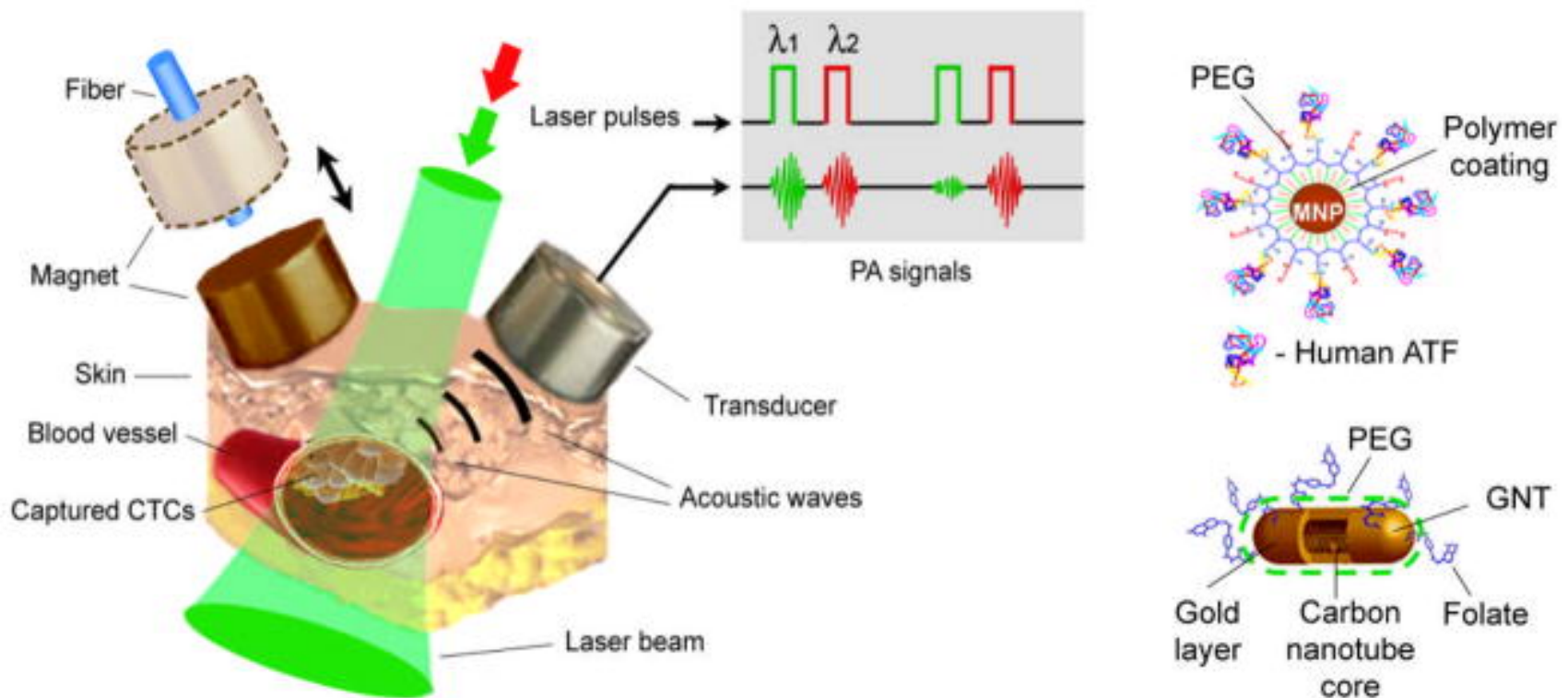
First Proposal: Nanoscale Resolution MRI



Second Proposal: In Vivo Flux Cytometry



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Third Proposal: Portable Biosensor

