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# Non-invasive cell tracking system using lipid supported polymeric nanoparticle

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Conventional technology for cell tracking was mainly focused on fluorescence imaging and MRI. In case of using fluorescence imaging method, low ability of tissue penetration is a big obstacle when conducting *in vivo* imaging. Thus, this method sometimes required invasive method simultaneously. Also, MRI enables cells to be visualized through non-invasive method accurately. However, this technology requires a lot of money and time. On the other hand, NIR imaging costs less and it enables accurate imaging because of its deep tissue penetration ability. However, when using chemical penetration or gene transfection method to stain cells, it affects cell metabolism and it can cause carcinoma. Here, we excluded possibilities to destroy functionalities of cells using membrane coating method, instead of internalization into the cells. Also, we used lipid coated PLGA nanoparticles to encapsulate ICG (Indocyanine green) which makes the cells to have prolonged light emitting period. This method also reduced cell toxicity. Finally, it became possible to track cells without interfering cell functionalities.

## Biography

Woo Jung Shin has completed MS from SungKyunKwan University. She is now conducting her research at SungKyunKwan University and planning to go US for her PhD. Her research interest mainly focused on biomaterials and their applications.

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