



STARSTEM

STARSTEM will help scientists and clinicians to understand how stem cells actually work.



A key question for regenerative medicine is the nature of the therapeutic agent – do stem cells lead to healing directly, or do they communicate with the body to trigger healing at a distance?

Mesenchymal stem cells, or MSCs, are a type of cell that can be isolated from the mix of cells that comprise the bone marrow. Microvesicles are tiny extracellular vesicles that are excreted by the MSCs. They are thought to help trigger healing and support tissue repair in the body.



Gold nanostars will be attached to stem cells and microvesicles. Using Photo-acoustic (PA) imaging and MRI, these tagged targets can be detected in very small amounts and at greater depths in order to track their distribution, engraftment, and activity over time.

Understanding the hallmarks of the healing process will help researchers and doctors to treat osteoarthritis and a wide range of human diseases.



The STARSTEM Team



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