

# High-throughput approach to select subpopulations of multipotent cells for regenerative medicine

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Rapid, large-scale screening to characterize the different subpopulations of multipotent cells that can be derived from fat tissue is an effective strategy to identify and select for specific cell types that would be advantageous for particular therapeutic applications in regenerative medicine and tissue engineering. The use of flow cytometry to determine the expression of a defined set of markers on the surface of human adipose-derived stromal cells (hASCs) is described in an article in *Tissue Engineering*.

Michael Longaker, MD, MBA and coauthors, Stanford University School of Medicine (California), developed a comprehensive surface marker profile of undifferentiated (hASCs) using [flow cytometry](#). They compared this to surface marker profiles for hASCs that have undergone differentiation to bone (osteogenic) or fat (adipogenic) cell lineages. The researchers describe these studies and identify which surface markers increase or decrease with osteogenic and adipogenic differentiation in the article "High-Throughput Screening of Surface Marker Expression on Undifferentiated and Differentiated Human Adipose-Derived Stromal Cells."

"Flow cytometry is a well established tool for the separation of [cells](#) on the basis of their size and surface markers," says Peter C. Johnson, MD, Vice President, Research and Development and Medical Affairs, Vancive Medical Technologies and President and CEO, Scintellix, LLC,

Raleigh, NC. "This marriage of flow cytometry with the identification of regenerative cell subpopulations will likely prove to be very useful to a broad range of researchers in the field."

**More information:** [online.liebertpub.com/doi/full ...  
89/ten.tea.2015.0039](https://online.liebertpub.com/doi/full/10.1089/ten.tea.2015.0039)

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