

Abstract Submitted
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The Effects of Hemodynamic Shear Stress on Stemness of Acute Myelogenous Leukemia (AML)¹ ANDREW RADDATZ, URSULA TRIANTAFILLU, YONGHYUN (JOHN) KIM, University of Alabama — Cancer stem cells (CSCs) have recently been identified as the root cause of tumors generated from cancer cell populations. This is because these CSCs are drug-resistant and have the ability to self-renew and differentiate. Current methods of culturing CSCs require much time and money, so cancer cell culture protocols, which maximize yield of CSCs are needed. It was hypothesized that the quantity of Acute myelogenous leukemia stem cells (LSCs) would increase after applying shear stress to the leukemia cells based on previous studies with breast cancer in bioreactors. The shear stress was applied by pumping the cells through narrow tubing to mimic the in vivo bloodstream environment. In support of the hypothesis, shear stress was found to increase the amount of LSCs in a given leukemia population.

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