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Abstract

Automation of Human Pluripotent Stem Cell Culture and Directed Differentiation

Culturing techniques for human ES cells and induced pluripotent stem cells (iPS cells) are very laborious and require highly skilled personal. In an effort to improve human ES cell culture and facilitate automation, new methods for cell maintenance, screening and directed differentiation were developed. A pilot system was established that was able to serve as prove-of-principle for automated splitting and feeding. The system was also used to establish a platform for small molecule screening to look for factors that can improve culture and directed differentiation. The presentation will focus on challenges and opportunities that have arisen during the automation project. It will also describe how these efforts are implemented to scale-up production of cells for basic research and drug discovery.

Biography

Veit Bergendahl, PhD, is an assistant scientist working in the lab of Professor Dr. James Thompson at the University of Wisconsin-Madison. Dr. Bergendahl has comprehensive training in cell biology and tissue culture, specifically human embryonic stem cells. He also has worked extensively with protein purification and has several patents related to RNA. Dr. Bergendahl received his PhD in biochemistry from Phillips University in Marburg, Germany and came to Dr. Thompson's lab in 2004 as a post-doctoral research associate.