Julie R Murrell, J Cell Sci Ther 2015, 6:2
http://dx.doi.org/10.4172/2157-7013.S1.032

OMICS International
conferenceseries.com

5th World Congress on
Cell & Stem Cell Research
March 23-25, 2015 DoubleTree by Hilton Chicago - North Shore, USA

Upstream expansion solutions for stem cells

Julie R Murrell
EMD Millipore, USA

The long-term view of regenerative medicine therapies predicts an increased need for expansion solutions that ease scalability, utilize animal origin-free materials and are compatible with limited downstream processing steps. As more stem cell therapeutics progress through clinical testing, current *in vitro* culture methods in 2D vessels are proving cumbersome to scale. Moreover, the concurrent decreased demands for serum from the recombinant protein and vaccines markets may result in a shortage of serum as clinical cell therapy programs are successful. Currently available technologies and challenges in the upstream bioprocessing space, focusing on expansion of allogeneic mesenchymal stromal/stem cells (MSCs) will be reviewed within the context of specific case studies. First, we have developed an approach for selecting media and microcarriers, using adipose-derived MSCs as a model cell line. Next, an evaluation of animal-free media supplementation and cellular detachment solutions was performed. Because cellular therapeutic manufacturing processes are further complicated by the requirement to separate cells from microcarriers whilst retaining cell yield, viability and target phenotypic and functional characteristics, the importance of considering downstream challenges while establishing upstream parameters will be highlighted.

Biography

Julie R Murrell is a Senior R&D Manager for Stem Cell Biology and Collaborations at EMD Millipore. She led an early technology assessment group for the past 7 years and has been part of the Stem Cell group for 3 years. Through that time, she has led the efforts to establish robust assays and identify new targets as key quality attributes for large scale stem cell manufacturing, with a special focus on hMSCs. Her background is in Cell and Molecular Biology. Her multi-disciplinary background has led to innovative team-driven approaches in the field of stem cell production.

julie.murrell@emdmillipore.com

Notes: