Title: Impact of Allogeneic Stem Cell Manufacturing Decisions on Cost of Goods, Process Robustness and Reimbursement

Authors: Tania D. Pereira Chilima, Fabien Moncaubeig, Suzanne S. Farid

PII: S1369-703X(18)30136-0
DOI: https://doi.org/10.1016/j.bej.2018.04.017
Reference: BEJ 6937

To appear in: *Biochemical Engineering Journal*

Received date: 29-11-2017
Revised date: 23-3-2018
Accepted date: 22-4-2018

Please cite this article as: Chilima TDP, Moncaubeig F, Farid SS, Impact of Allogeneic Stem Cell Manufacturing Decisions on Cost of Goods, Process Robustness and Reimbursement, *Biochemical Engineering Journal* (2010), https://doi.org/10.1016/j.bej.2018.04.017

Impact of Allogeneic Stem Cell Manufacturing Decisions on Cost of Goods, Process Robustness and Reimbursement

Tania D Pereira Chilima[1], Fabien Moncaubeig[2], Suzanne S. Farid[1*]

[1]*The Advanced Centre for Biochemical Engineering, Dept. of Biochemical Engineering, University College London, Gower Street, London WC1E 6BT, UK*

(tania.chilima.10@ucl.ac.uk, s.farid@ucl.ac.uk)

[2] Pall Artelis, Rue de Ransbeek 310, Brussels, 1120, Belgium[1]

(fabien.moncaubeig@bip-partners.com)

***Corresponding author:**

Suzanne S. Farid - s.farid@ucl.ac.uk

Tel +44 (0) 20 7679 4415

Fax +44 (0) 20 7916 3943

[1] Currently at BIP-partners (Cugnaux, France)

Highlights

- Planar technologies are cheaper than microcarriers in STRs for demands ≤ 1B cells/year
- Microcarriers in STRs are cheaper than planar technologies for demands ≥ 10B cells/year
- MSC products with high annual demands face economic and operational challenges
- Cell culture optimization can address the economic challenges
- DSP optimization is required to address operational challenges

Abstract

This article presents a framework to evaluate holistically the operational and economic performance of different manufacturing platforms for the expansion of allogeneic mesenchymal stromal cells (MSCs) across different commercialisation scenarios. The tool comprised models for whole