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PII: S0376-7388(16)31842-7
DOI: http://dx.doi.org/10.1016/j.memsci.2017.08.036
Reference: MEMSCI15502

To appear in: *Journal of Membrane Science*

Received date: 4 October 2016
Revised date: 12 July 2017
Accepted date: 14 August 2017

Cite this article as: Bárbara Cunha, Ricardo J.S. Silva, Cláudia Correia, Alexey Koshkin, Paula M. Alves, Margarida Serra, Cristina Peixoto and Manuel J.T. Carrondo, Finding the design space of a filtration-based operation for the concentration of human pluripotent stem cells, *Journal of Membrane Science,* http://dx.doi.org/10.1016/j.memsci.2017.08.036

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Abstract

Process knowledge for designing robust and reproducible unit operations is essential, especially for complex biological systems. This work describes a shortcut approach for the design of tangential flow filtration for the concentration of human induced pluripotent stem cells (hiPSC), supported by design of experiments. Critical process parameters (CPP) of shear rate, permeate flux and cell load were considered, and their impact on hiPSC recovery yield and viability was studied. A full factorial design confirmed significant interaction effects between all CPP, affecting both responses. The developed statistical model predicted that high shear rate (3000 s^{-1}), permeate flux (250 LMH) and medium cell load (2 x 10^6 cell/cm^2)

[1] Equal contribution