



Supplementary Information

Comparative Evaluation of the Performance of Sterile Filters for Bioburden Protection and Final Fill in Biopharmaceutical Processes

Jimin Na ¹, Dongwoo Suh ², Young Hoon Cho ^{3,4,*} and Youngbin Baek ^{1,*}

¹ Department of Biological Engineering, Inha University, 100 Inha-ro, Michuhol-gu, Incheon 22212, Korea; jmna0227@gmail.com

² School of Chemical and Biological Engineering, College of Engineering, Institute of Chemical Process (ICP), Seoul National University (SNU), 1 Gwanak-ro, Gwanak-gu, Seoul 08826, Korea; dwsuh1@snu.ac.kr

³ Green Carbon Research Center, Korea Research Institute of Chemical Technology (KRICT), 141 Gajeong-ro, Yuseong-gu, Daejeon 34114, Korea

⁴ Department of Advanced Materials and Chemical Engineering, University of Science & Technology (UST), Yuseong-gu, Daejeon 34113, Korea

* Correspondence: yhcho@kRICT.re.kr (Y.H.C.); ybbaek@inha.ac.kr (Y.B.); Tel.: +82-42-860-7684 (Y.H.C.); +82-32-860-7516 (Y.B.)

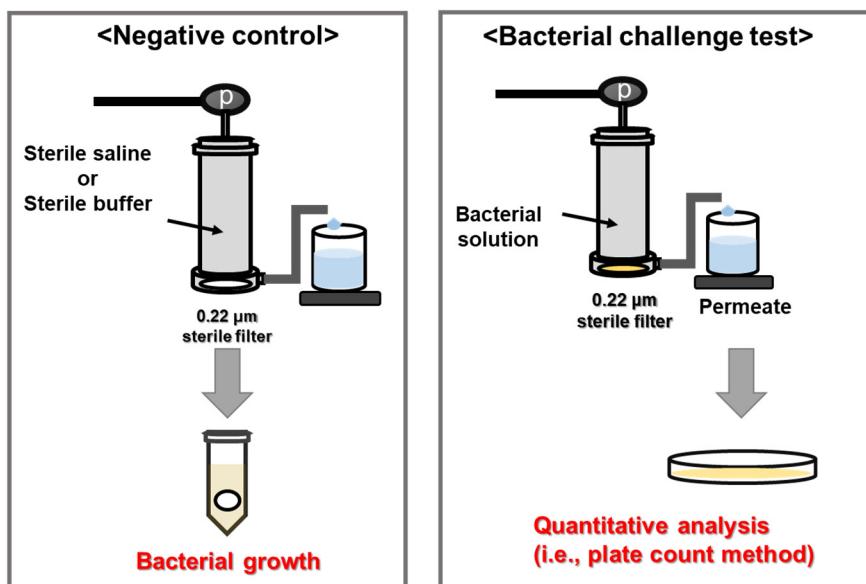


Figure S1. Experimental procedure of bacterial challenge test with negative control.

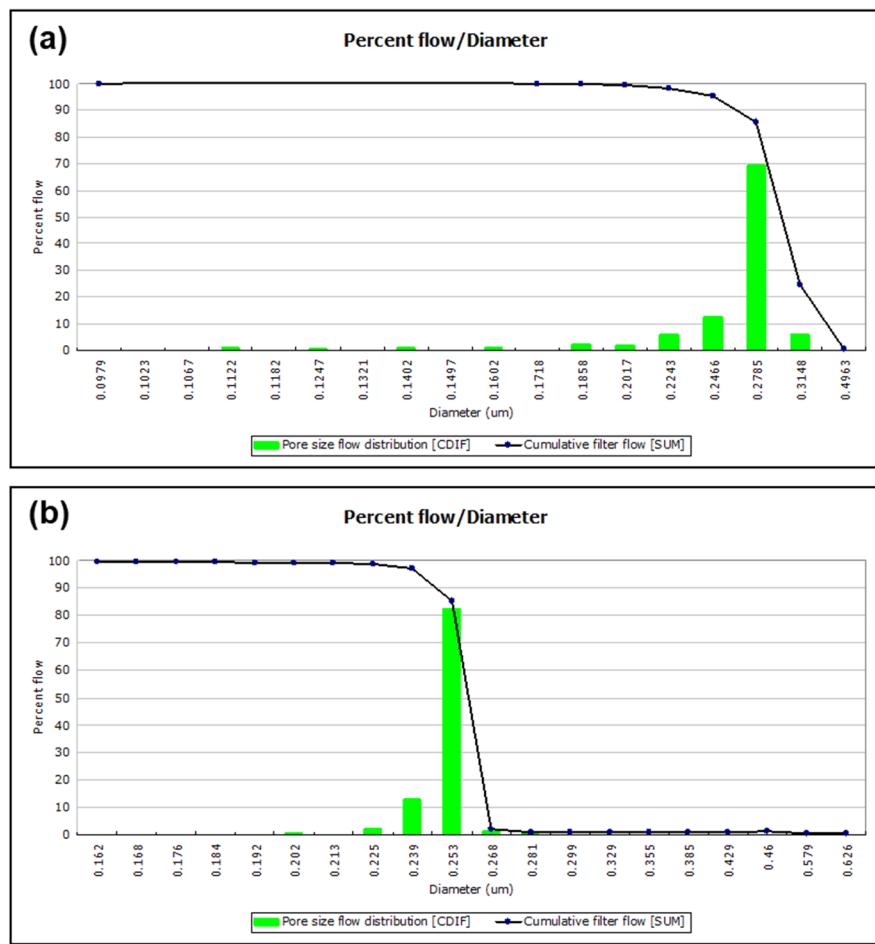


Figure S2. Gas–liquid porometry for (a) filter A and (b) filter B.

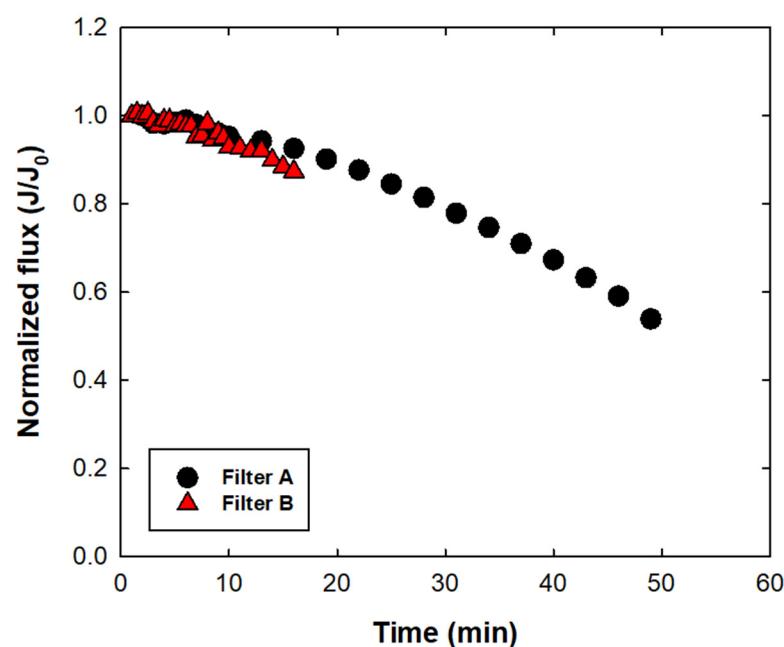


Figure S3. Normalized flux versus time plot for LB broth filtration using filters A and B.

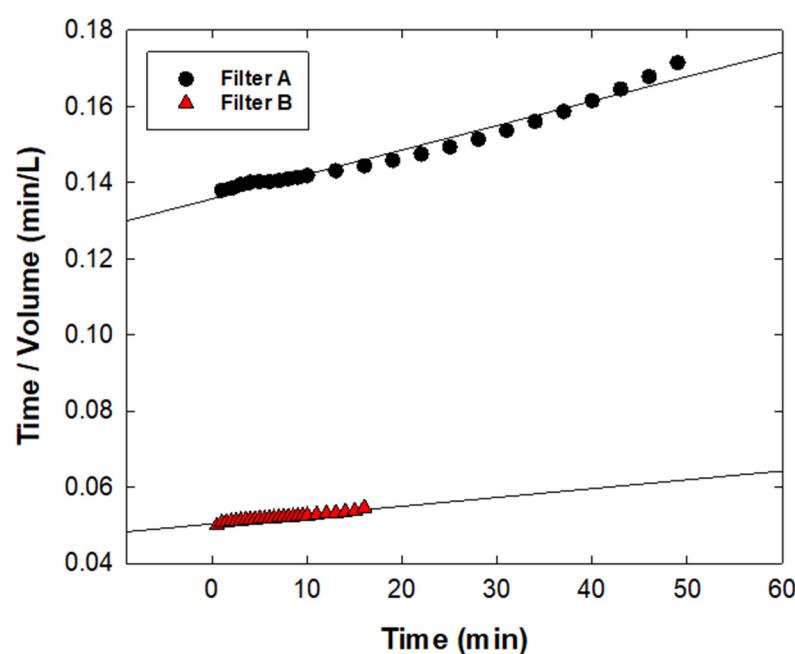


Figure S4. Time versus time/volume plot for calculating maximum permeate volume (V_{\max}) of filters A and B.

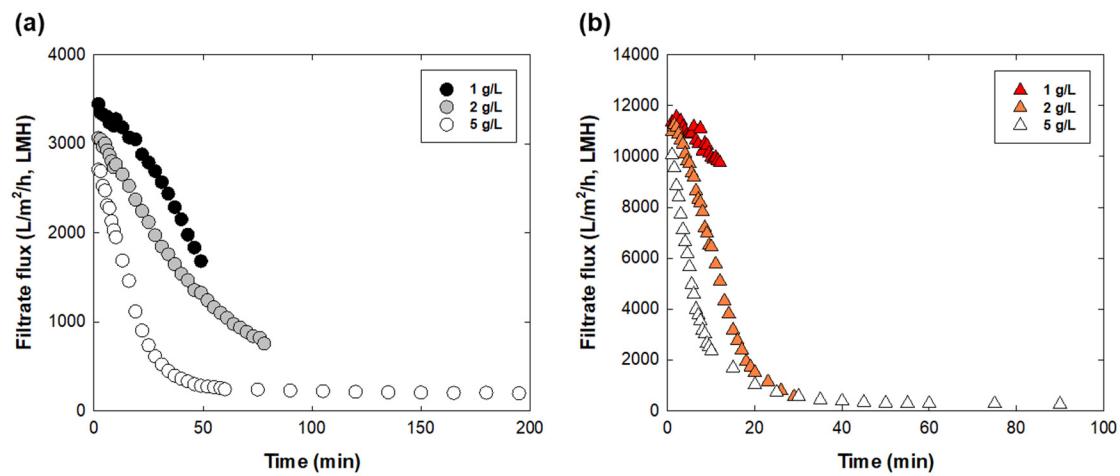


Figure S5. Filtrate flux as function of operation time at different BSA concentrations (1, 2, and 5 g/L) using (a) filter A and (b) filter B for final fill.

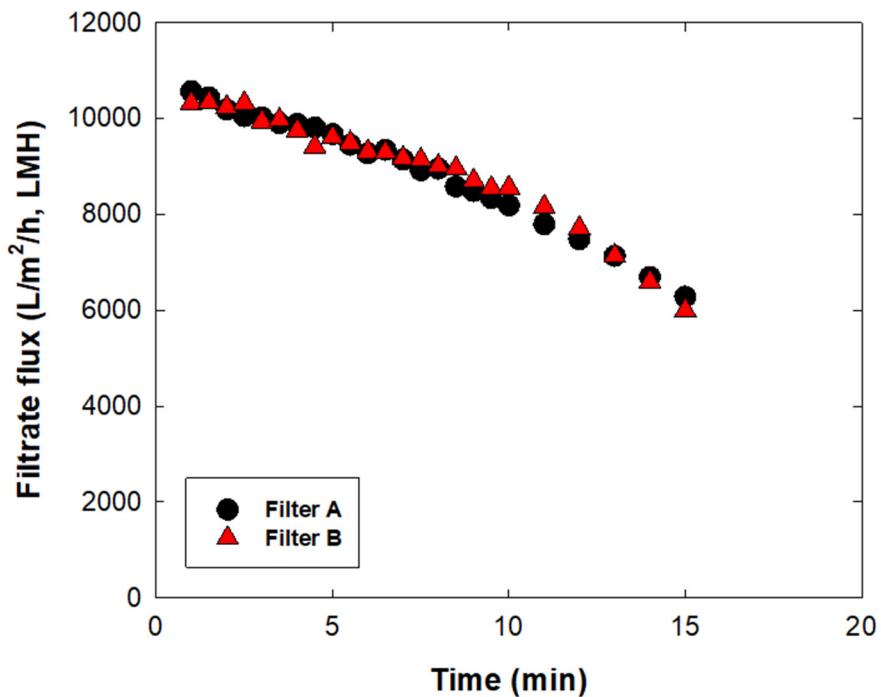


Figure S6. Filtrate flux as function of operation time for 2 g/L of BSA solution filtration at same initial flux (approximately 10,500 LMH) with adjusted operating pressure at 1.5 bar for filter A.