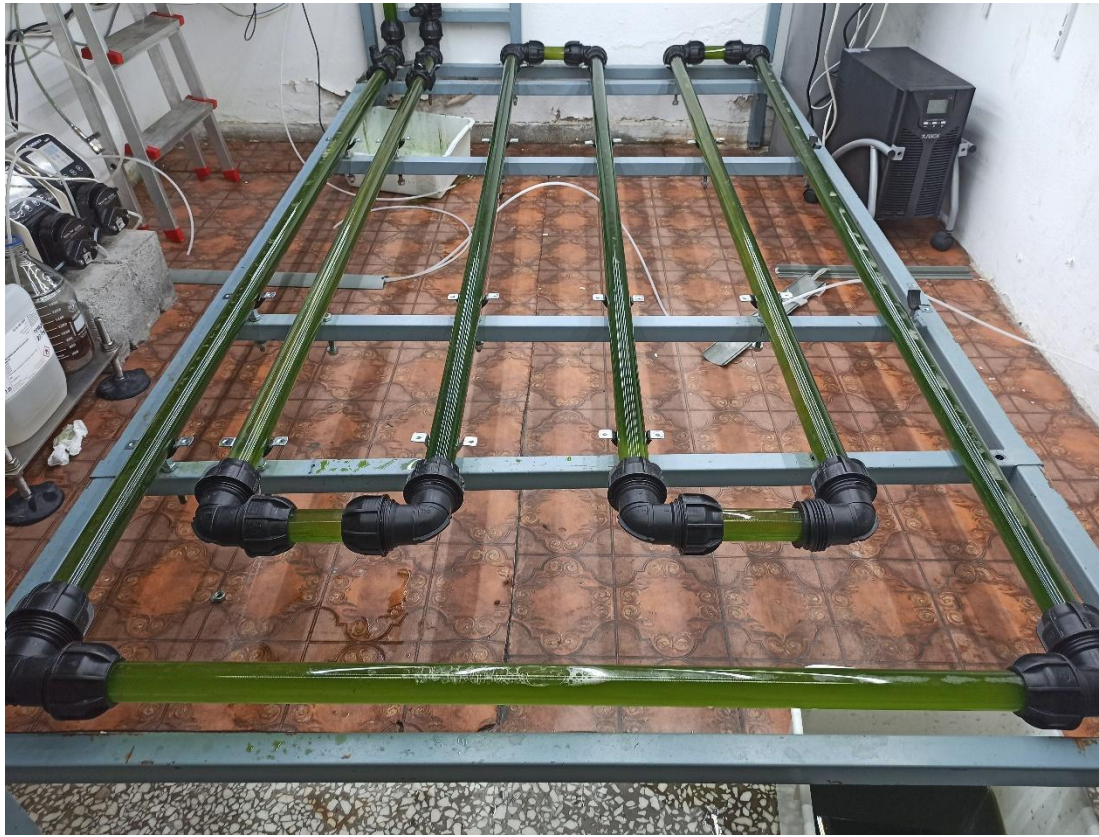


Figure S1: Conceptual diagram of the 20 L air-lift photobioreactor.



(a)

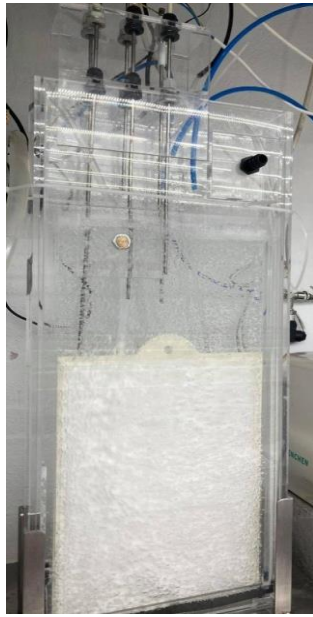


(b)



(c)

Figure S2: Airlift tubular photobioreactor: solar receiver part (a-b), degasser (c)



(a)



(b)



(c)

Figure S3: Ultrafiltration Membrane (UFM) System: (a) UFM vessel filled with sodium hypochlorite (NaClO) solution (b) UFM vessel – level sensors (inside the vessel)- inlet and harvesting peristaltic pumps (right) and (c) UFM vessel filled with microalgae culture during harvesting period.

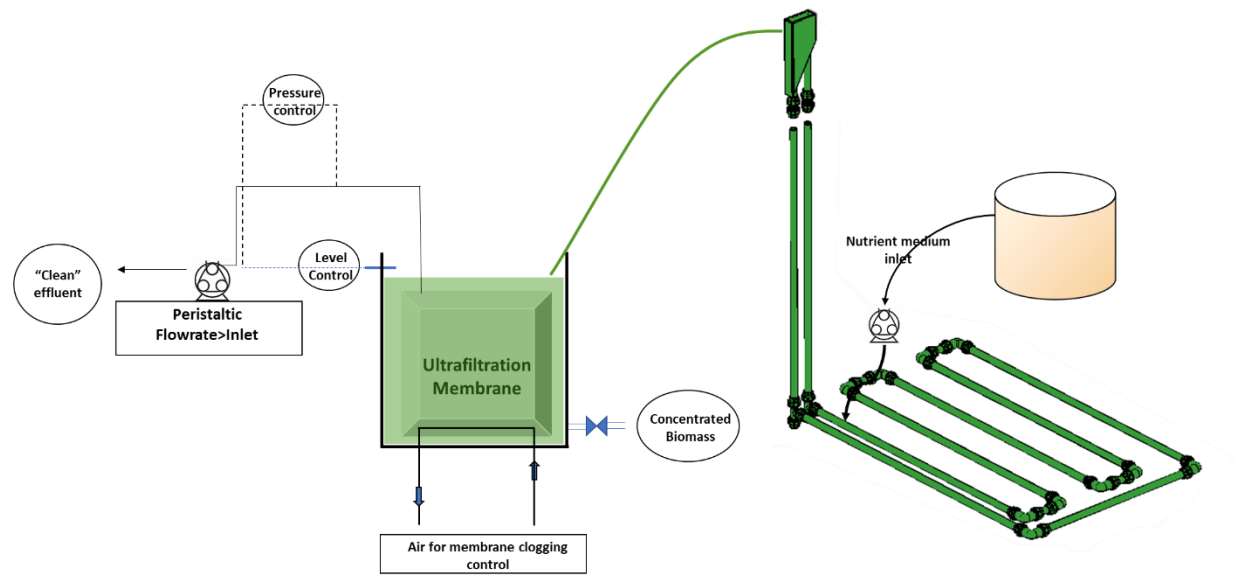
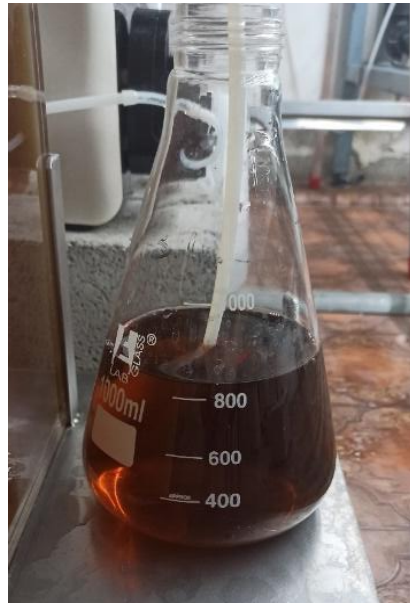


Figure S4: Schematic illustration of the ultrafiltration membrane system



(a)



(b)



(c)

Figure S5: 10% ADE before (a), after ultra-filtration (b) and during filter-sterilization at UMF (c).