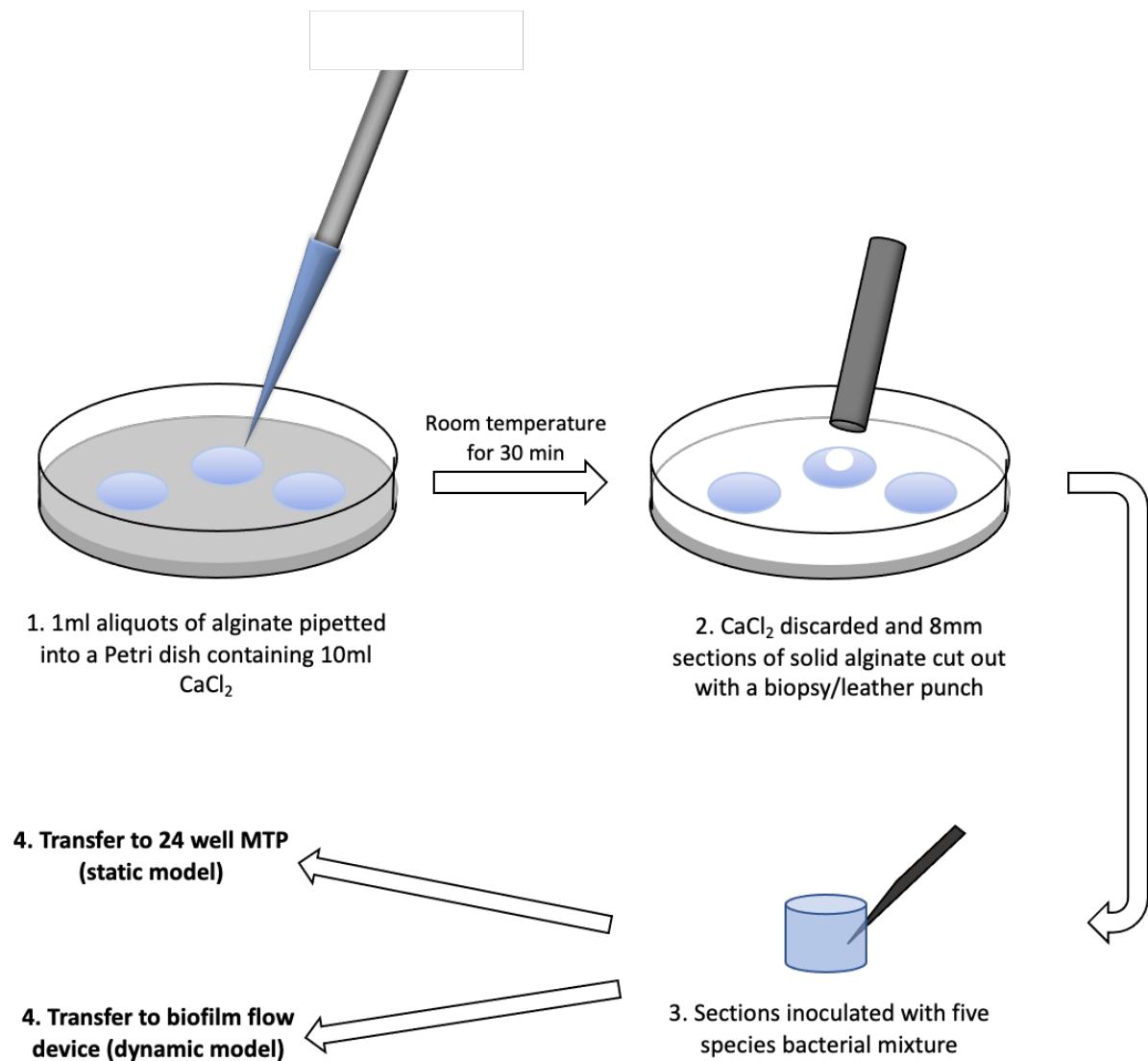
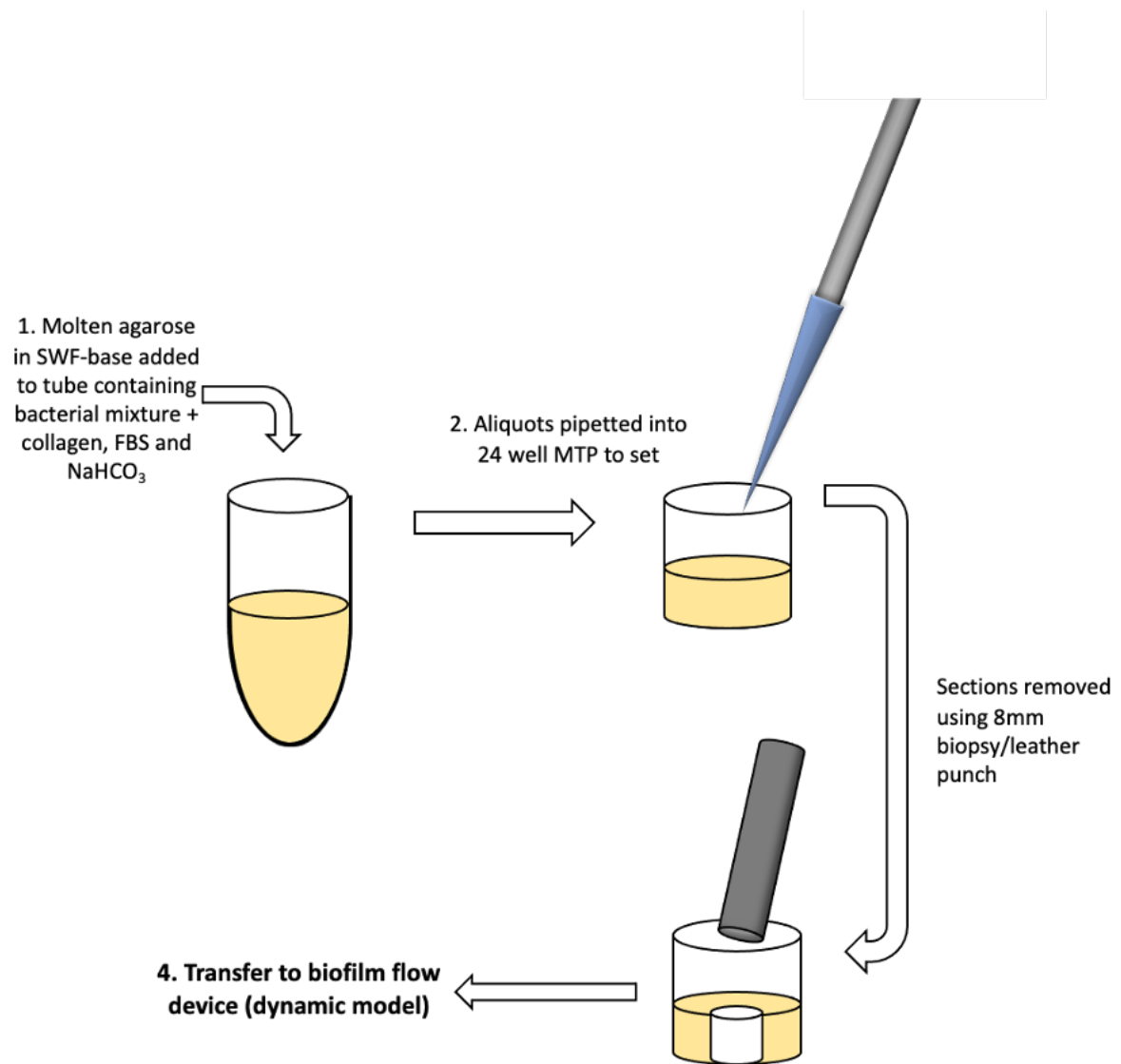


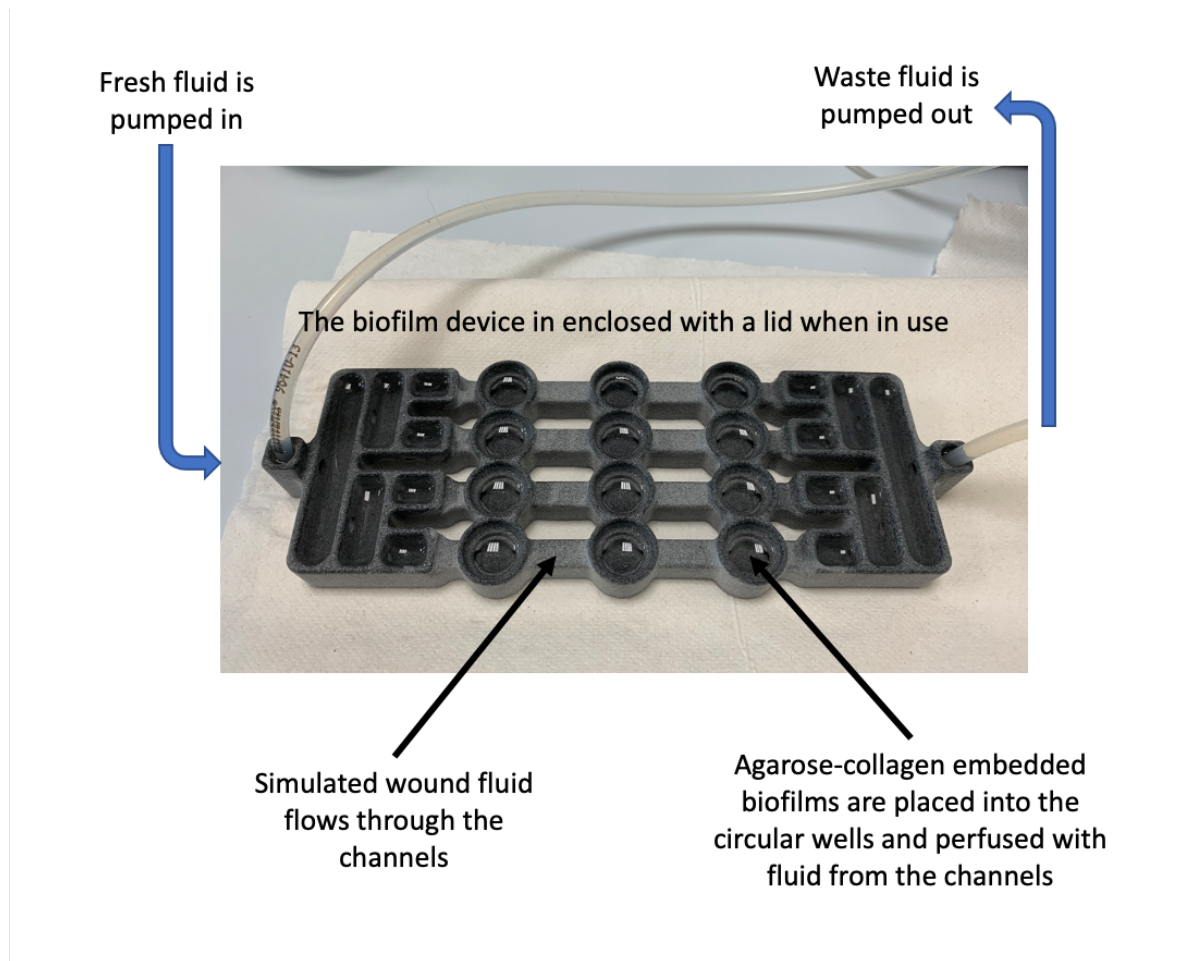
## Supplementary materials



**Figure S1.** Schematic representation of biofilm preparation using an alginate matrix inoculated with bacterial suspension.



**Figure S2.** Schematic representation of biofilm preparation using an agarose-collagen matrix in which bacteria are embedded.



**Figure S3.** Biofilm flow device when prepared for mixed-species biofilm growth under flow, using biofilms embedded in an agarose-collagen matrix.