

**Table S1** Data of bladder model comparison

First author	Year	Model	Outcome
Frant M (20)	2018	Encrustator® Model	Only a small amount of crystal deposit (~0.057 mg/cm <sup>2</sup> ) formed on the surface of the polyurethane catheter, and the main components were magnesium ion and phosphate; only a small amount of calcium, potassium, sodium and oxalate ion were detected.
		BioEncrustation Model	A significantly higher concentration of sediment (~0.37 mg/cm <sup>2</sup> ) formed, which was mainly composed of sodium and oxalate ions. In addition, a large number of divalent cationic magnesium and calcium were detected. The surface phosphate ion concentration is comparable.
Azevedo AS (27)	2017	Static model	The growth curve of the dynamic model is similar to that of the two bacterial biofilm formed on the artificial urine silicone test piece in the previous study. Fish combined with CLSM to evaluate the spatial distribution of biofilm. Compared with the dynamic condition, the single species biofilm in the static condition has a higher thickness value
		Dynamic laminar flow model	Single microbial biofilm showed that the number of culturable cells of botulinum toxin and scrub typhus increased significantly within 48 h ( $P < 0.05$ ), in addition, the growth rate of scrub typhus was faster (0.4879 h <sup>-1</sup> ) comparing with <i>E. coli</i> (0.2831 h <sup>-1</sup> ), and the dynamic culture conditions had a negative impact on the cell concentration.
Ivanova K (30)	2015	Static model	Foley catheter coated with acylase in the dynamic system has the same trend of inhibiting biofilm formation as that in the static system
		Dynamic model	Crystal violet and fluorescence image analysis showed that the formation of acylase coated bacterial biofilm was inhibited by 80% when <i>Pseudomonas aeruginosa</i> ATCC10145 was infected in a dynamic environment.
Rasmussen A (56)	1996	Bladder model with no urine flow meter	The bacteria were positive after three days of culture.
		Bladder model with urine flow meter	There was no positive bacterial culture, and the retrograde bacterial infection was suppressed. Among them, Urometer 500 meter had no bacterial positive or retrograde infection after nine days of culture compared with the other two meters ( $P = 0.04$ )
Wong HY (57)	1995	Discharge valve opened per 4–6 h in the bladder model vs. continually	The results of bacterial growth did not change in either the intermittent filling, emptying of the drain valve set, or the continuous drainage simulating the Foley catheter drainage environment.