

Accepted Manuscript

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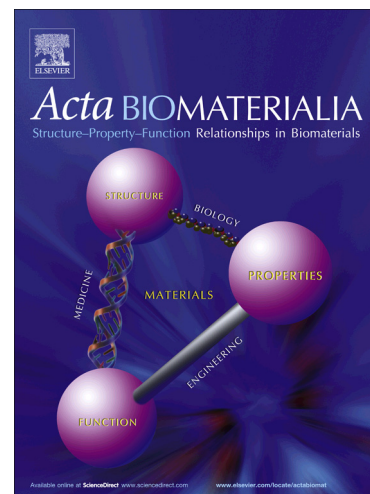
PII: S1742-7061(17)30624-4
DOI: <https://doi.org/10.1016/j.actbio.2017.10.008>
Reference: ACTBIO 5114

To appear in: *Acta Biomaterialia*

Received Date: 15 June 2017
Revised Date: 30 September 2017
Accepted Date: 6 October 2017

Please cite this article as: Zhu, Z., Yu, F., Chen, H., Wang, J., Lopez, A.I., Chen, Q., Li, S., Long, Y., Darouiche, R.O., Hull, R.A., Zhang, L., Cai, C., Coating of silicone with mannoside-PAMAM dendrimers to enhance formation of non-pathogenic *Escherichia coli* biofilms against colonization of uropathogens, *Acta Biomaterialia* (2017), doi: <https://doi.org/10.1016/j.actbio.2017.10.008>

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**Coating of silicone with mannoside-PAMAM dendrimers to enhance
formation of non-pathogenic *Escherichia coli* biofilms against
colonization of uropathogens**

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ABSTRACT

Bacterial interference using non-pathogenic *Escherichia coli* 83972 is a novel strategy for preventing catheter-associated urinary tract infection (CAUTI). Crucial to the success of this strategy is to establish a high coverage and stable biofilm of the non-pathogenic bacteria on the catheter surface. However, this non-pathogenic strain is sluggish to form biofilms on silicone as the most widely used material for urinary catheters. We have addressed this issue by modifying the silicone catheter surfaces with mannosides that promote the biofilm formation, but the stability of the non-pathogenic biofilms challenged by uropathogens over long-term remains a concern. Herein, we report our study on the stability of the non-pathogenic biofilms grown on propynylphenyl mannoside-modified silicone. The result shows that 94% non-pathogenic bacteria were retained on the modified silicone under >0.5 Pa shear stress. After being challenged by three multidrug-resistant uropathogenic isolates in artificial urine for 11 days, large amounts ($>4 \times 10^6$ CFU cm⁻²) of the non-pathogenic

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