

Supporting information for

Generation of Uniform Polymer Eccentric and Core-centered Hollow Microcapsules for Ultrasound-regulated Drug Release

Jingxian Huang^a, Wanbo Li^a, Yan Li^a, Chongdai Luo^a, Yecheng Zeng^b, Yuehong Xu^b,
Jianhua Zhou^{a*}

^a Prof. J. Zhou, Mr. J. Huang, W. Li, Y. Li, C. Luo

Biomedical Engineering Department,
School of Engineering, Sun Yat-sen University,
Guangzhou 510006, China

^b Prof. Y. Xu, Mr. Y. Zeng

School of Pharmaceutical Science,
Sun Yat-sen University,
Guangzhou 510006, China

*Corresponding author. Tel.: +86 20 39387890; fax: +86 20 39387890.

E-mail address: zhoujh33@mail.sysu.edu.cn (J.H. Zhou).

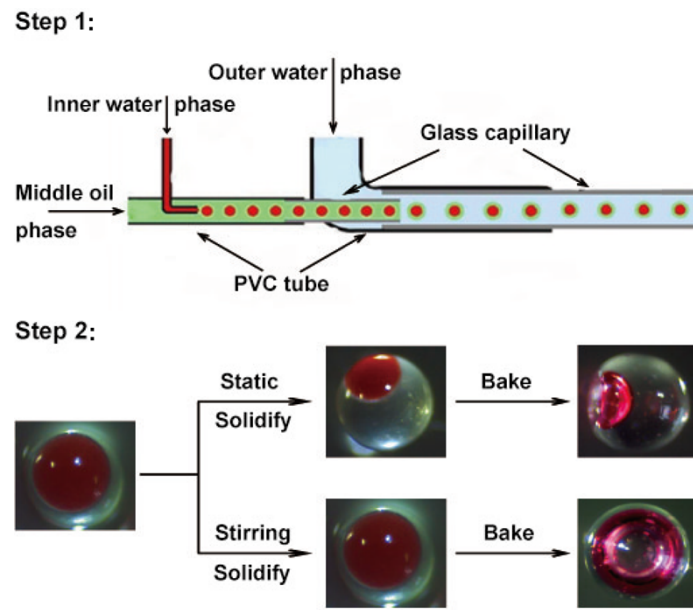


Figure S1. Production of two types of uniform hollow microcapsules with a microfluidic device followed by stirring and baking.

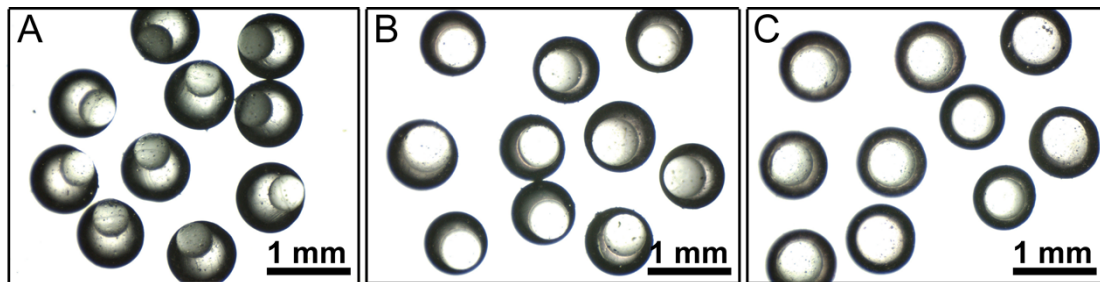


Figure S2. Optical images of the cross sections of microcapsules which have different eccentricity. (A) The eccentric microcapsules which are off-centered. (B) The microcapsules which have a smaller eccentricity than off-centered microcapsules. (C) Core-centered microcapsules.

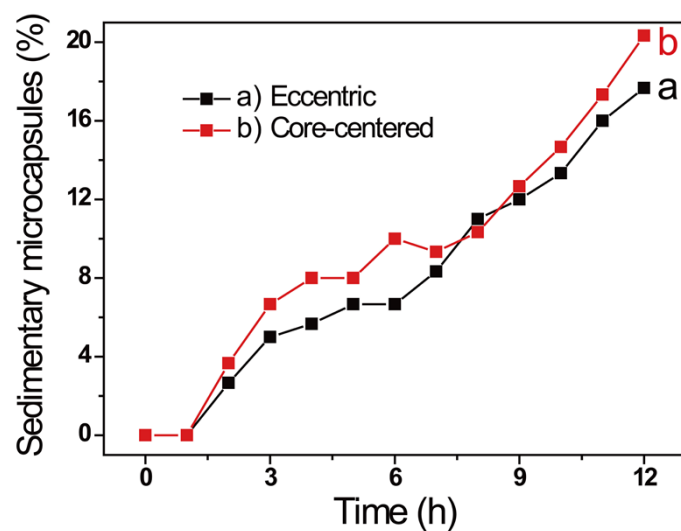


Figure S3. Rate of descent as a function of the time. After 12 h, ~18% of eccentric microcapsules and ~20% of core-centered microcapsules sank to the bottom of the beaker. Besides, the floating lag time was about 5 s.

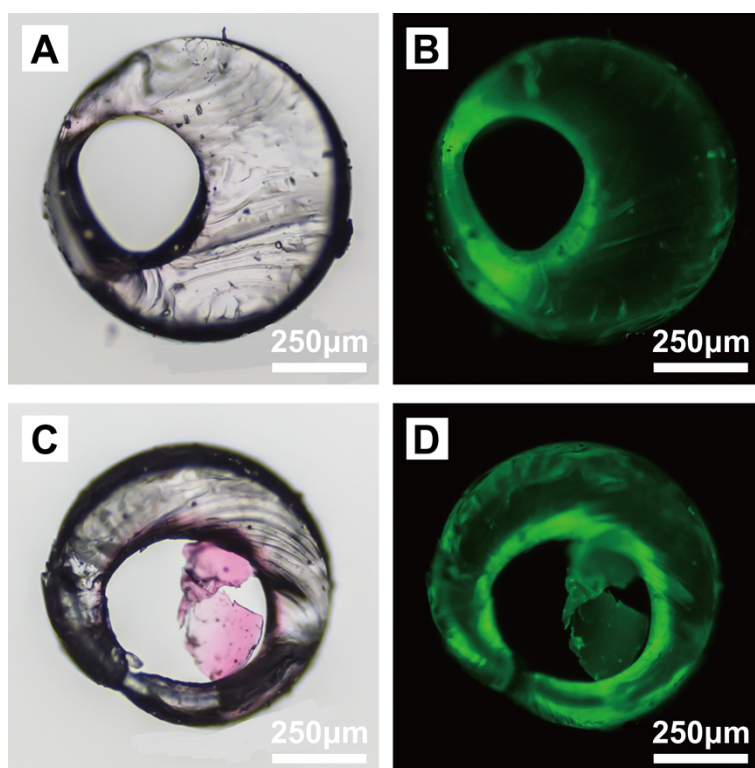


Figure S4. Optical and fluorescence images of the cross sections of the baked microcapsules. (A) and (B) Eccentric microcapsules. (C) and (D) Core-centered microcapsules. The internal phase contains rhodamine 6G.

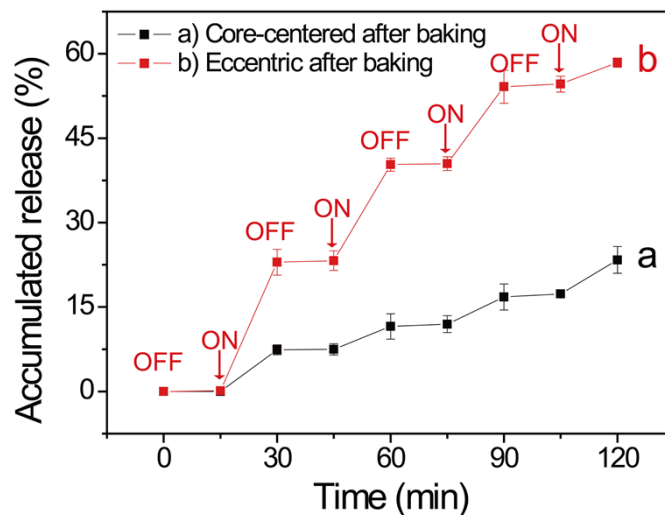


Figure S5. Ultrasound-triggered pulsatile release of rhodamine 6G from a) core-centered and b) eccentric microcapsules. We open the ultrasound at “ON” time point and stop the ultrasound at “OFF” point.

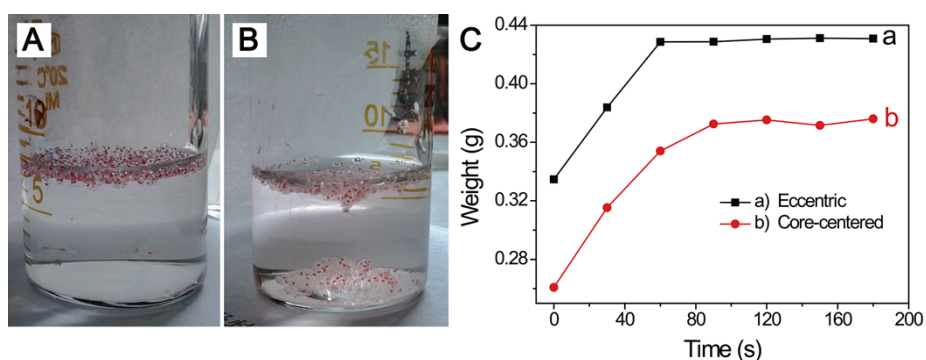


Figure S6. (A) and (B) The optical images of hollow microcapsules before and after exposing to ultrasound. The baked microcapsules sank to the bottom of the bottle after ultrasonication for 1.5 h. (C) The weight of microcapsules as a function of time under ultrasound.

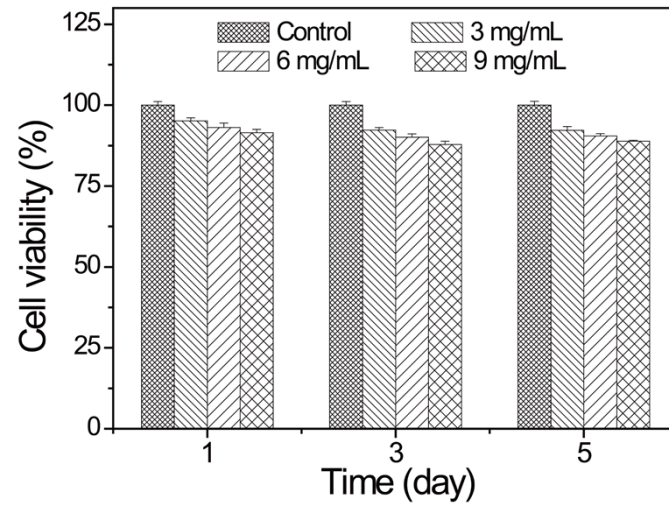


Figure S7. Cell viability after treated with different concentrations of microcapsules for different days.