

***Cite this as:*** Yankun ZHANG, Bingtao TANG, Yu XIN, Qiong WU, Lan LIU, Yunxia WANG, Kongxi ZHU, Guimei LIN, Hongjuan WANG. Nanobubbles loaded with carbon quantum dots for ultrasonic fluorescence dual detection[J]. Journal of Zhejiang University Science B, 2022, 23(9): 778-783.

<https://doi.org/10.1631/jzus.B2200233>

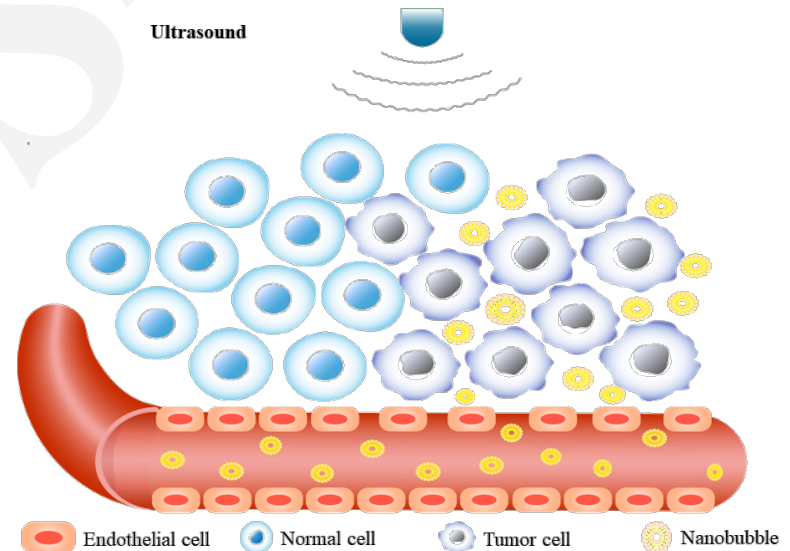
# **Nanobubbles loaded with carbon quantum dots for ultrasonic fluorescence dual detection**

**Key words:** Liposome; Nanobubble; Ultrasound imaging; Carbon quantum dots

# Research Summary

This paper mainly focused on the multiplex imaging by preparing CQDs -loaded nanobubbles for ultrasonic fluorescence dual detection in the following aspects:

- preparation and evaluation of CQDs-Lip
- ultrasound and fluorescence imaging of CQDs-Lip *in vivo*



# *Innovation points*

- **Preparation** of the testing agent for two-way diagnosis using ultrasound contrast and fluorescence detection.
- **Optimization** of the prescription composition and preparation process of CQDs-Lip
- **Evaluation** of the efficiency and accuracy of ultrasound and fluorescence imaging with CQDs-Lip *in vivo*

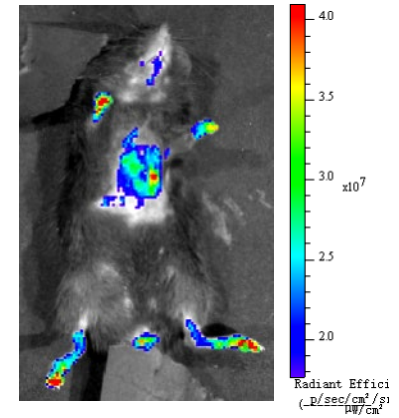
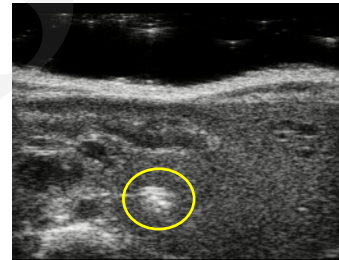
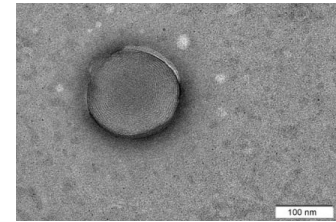


Figure 4