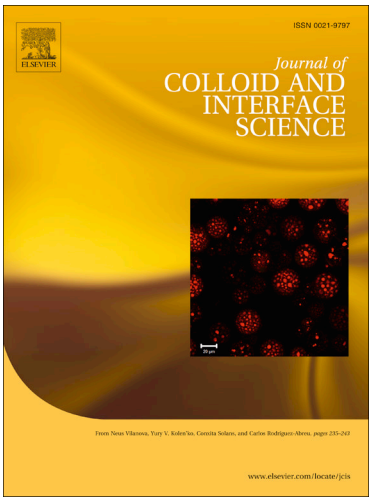
Accepted Manuscript



Small Size Mesoporous Organosilica Nanorods with Different Aspect Ratios: Synthesis and Cellular Uptake

Yanjiao Li, Wenwen Guo, Xiaodan Su, Lin Ou-Yang, Meng Dang, Jun Tao, Guangming Lu, Zhaogang Teng

PII: S0021-9797(17)31162-1
DOI: https://doi.org/10.1016/j.jcis.2017.10.006
Reference: YJCIS 22876

To appear in: *Journal of Colloid and Interface Science*

Received Date: 30 August 2017
Revised Date: 1 October 2017
Accepted Date: 3 October 2017

Please cite this article as: Y. Li, W. Guo, X. Su, L. Ou-Yang, M. Dang, J. Tao, G. Lu, Z. Teng, Small Size Mesoporous Organosilica Nanorods with Different Aspect Ratios: Synthesis and Cellular Uptake, *Journal of Colloid and Interface Science* (2017), doi: https://doi.org/10.1016/j.jcis.2017.10.006

Small Size Mesoporous Organosilica Nanorods with Different Aspect Ratios: Synthesis and Cellular Uptake

Yanjiao Li,[a] Wenwen Guo,[e] Xiaodan Su,[d] Lin Ou-Yang,*[a] Meng Dang,[d] Jun Tao,[d] Guangming Lu,*[b c] and Zhaogang Teng*[bc]

[a] *Department of Medical Imaging of Southeast Hospital, Medical college of Xiamen University, Zhangzhou 363000, Fujian, P.R. China, E-mail: ddcqzg@126.com*

[b] *Department of Medical Imaging, Jinling Hospital, School of Medicine, Nanjing University, Nanjing 210002, Jiangsu, P.R. China, E-mail: cjr.luguangming@vip.163.com*

[c] *State Key Laboratory of Analytical Chemistry for Life Science, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210093, Jiangsu, P.R. China, Email: tzg@fudan.edu.cn*

[d] *Key Laboratory for Organic Electronics and Information Displays & Institute of Advanced Materials (IAM), Nanjing University of Posts & Telecommunications, Nanjing 210046, Jiangsu, P.R. China*

[e] *School of Medicine, Southeast University, Nanjing 210009, Jiangsu, P.R. China*

Abstract: In the work, small size thioether-bridged mesoporous organosilica nanorod (MONRs) are successfully synthesized using cetyltrimethylammonium bromide (CTAB) as structure-directing agent and bis[3-(triethoxysilyl)propyl]tetrasulfide (TETS) and tetraethoxysilane (TEOS) as co-precursors. The MONRs have tunable aspect ratios of 2, 3, and 4 (denoted as MONRs-2, MONRs-3, and MONRs-4), small and controllable lengths (75-310 nm), high surface area (570–870 cm^2 g^{-1}), uniform mesopores (2.4–2.6 nm), large pore volume (0.34 cm^3 g^{-1}), and excellent biocompatibility. The uptake of the MONRs by multidrug resistant human breast cancer