Electronic Supplementary Material for

Synthesis of well-dispersed layered double hydroxide core/ordered mesoporous SiO$_2$ shell nanostructure and its application in drug delivery

Haifeng Bao$^{a,b}$, Jianping Yang$^c$, Yan Huang$^c$, Zhi Ping Xu$^d$, Na Hao$^b$, Zhangxiong Wu$^{b,c}$, Gao Qing (Max) Lu$^d$, Dongyuan Zhao$^{b,c,*}$

$^a$ College of Materials, Chemistry and Chemical Engineering, Hangzhou Normal University, Hangzhou, Zhejiang, 310036, P. R. China
$^b$ Department of Chemical Engineering, Faculty of Engineering, Monash University, Clayton, VIC03800, Australia
$^c$ Department of Chemistry and Laboratory of Advanced Materials, Fudan university, Shanghai, 200433, P. R. China
$^d$ Australian Institute of Bioengineering and Nanotechnology, The University of Queensland, Brisbane QLD 4072, Australia

Email: dyzhao@fudan.edu.cn

Figure S1. Wide-angle XRD patterns of As-synthesized Mg$_2$Al-Cl-LDH nanoplates at room temperature (25 °C) and hydrothermally treated at 100 °C for 4 h (black) and the LDH@mSiO$_2$ core@shell NPs (red).
Figure S2. The SEM image of the as-synthesized core@shell nanocomposites LDH@mSiO$_2$ NPs.

Figure S3. TEM images of the core@shell nanocomposites LDH@mSiO$_2$ NPs with a thickness of 20 nm (A) and 50 nm (B).
Figure S4. Hydrodynamic diameter distributions of LDH NPs (up) and LDH@mSiO$_2$ NPs with a thickness of 20 nm (down).
Figure S5. Confocal images of KB cells incubated with FITC-LDH@mSiO$_2$ NPs (1000 µg/ml) under 488 nm excitation, bright field and their merged image.