Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Electronic Supplementary Information

Facile preparation of pH/reduction dual-responsive prodrug nanohydrogels for tumor-specific intracellular triggered release with enhanced anticancer efficiency

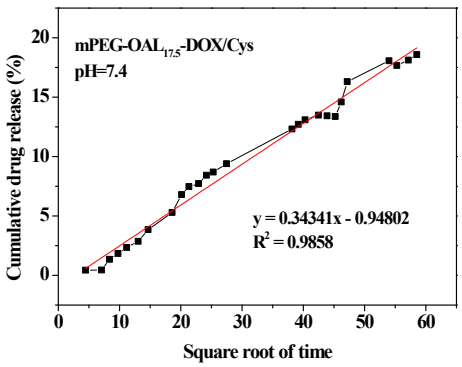
*Tingting Zhou, Xu Jia, Xubo Zhao, Jiagen Li, and Peng Liu**

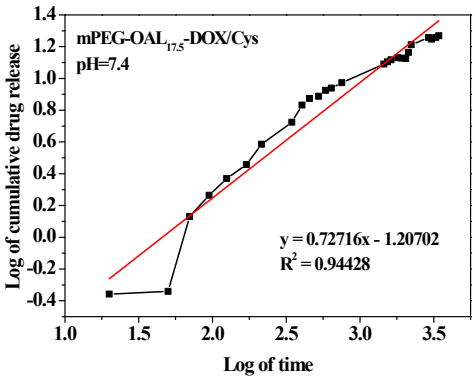
State Key Laboratory of Applied Organic Chemistry and Key Laboratory of Nonferrous Metal Chemistry and Resources Utilization of Gansu Province, College of Chemistry and Chemical Engineering, Lanzhou University, Lanzhou 730000, China.

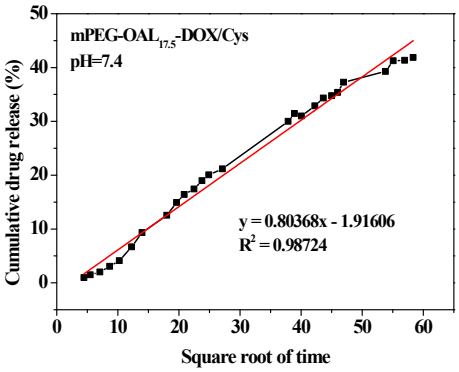
* Corresponding Author. Tel./Fax: 86 0931 8912582. Email: pliu@lzu.edu.cn.

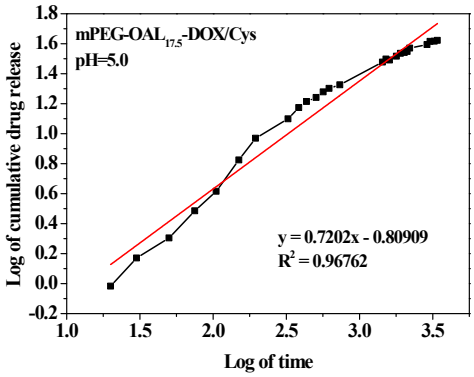
(a) (b)

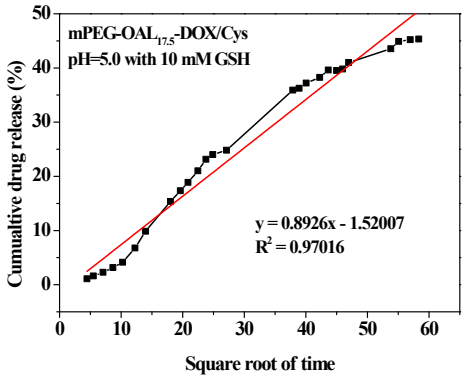
Figure S1. Digital photos of the DOX solution, the dispersions of the mPEG-OAL$_{20.0}$-DOX/Cys prodrug nanohydrogels in pH 7.4 with 10 mM GSH, pH 5.0 with 10 mM GSH, and water (from left to right) for (a) 0 h and (b) 58 h.

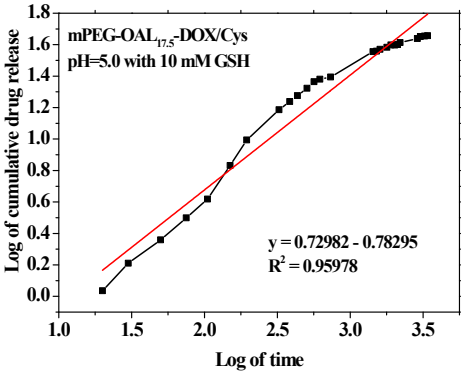

mPEG-OAL17.5-DOX/Cys
pH=7.4
y = 0.34341x - 0.94802
R2 = 0.9858
Cumulative drug release (%)
Square root of time

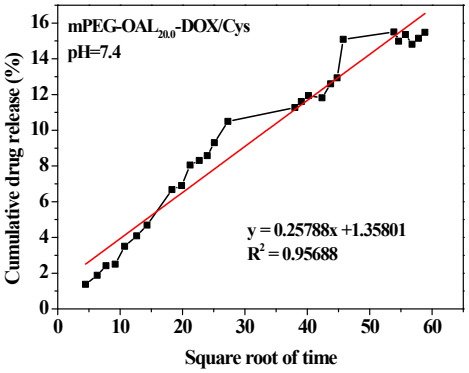

mPEG-OAL17.5-DOX/Cys
pH=7.4
y = 0.72716x - 1.20702
R2 = 0.94428
Log of cumulative drug release
Log of time

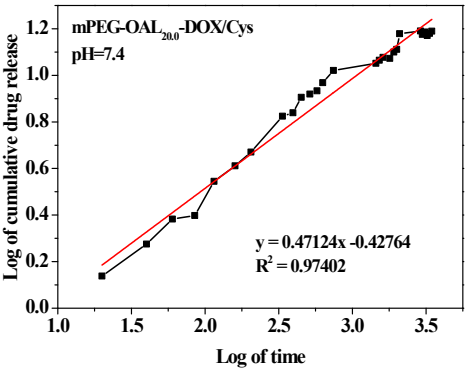

mPEG-OAL17.5-DOX/Cys
pH=7.4
y = 0.80368x - 1.91606
R2 = 0.98724
Cumulative drug release (%)
Square root of time


mPEG-OAL17.5-DOX/Cys
pH=5.0
y = 0.7202x - 0.80909
R2 = 0.96762
Log of cumulative drug release
Log of time


mPEG-OAL17.5-DOX/Cys
pH=5.0 with 10 mM GSH
y = 0.8926x - 1.52007
R2 = 0.97016
Cumaltive drug release (%)
Square root of time


mPEG-OAL17.5-DOX/Cys
pH=5.0 with 10 mM GSH
y = 0.72982 - 0.78295
R2 = 0.95978
Log of cumulative drug release
Log of time


mPEG-OAL20.0-DOX/Cys
pH=7.4
y = 0.25788x +1.35801
R2 = 0.95688
Cumulative drug release (%)
Square root of time


mPEG-OAL20.0-DOX/Cys
pH=7.4
y = 0.47124x -0.42764
R2 = 0.97402
Log of cumulative drug release
Log of time

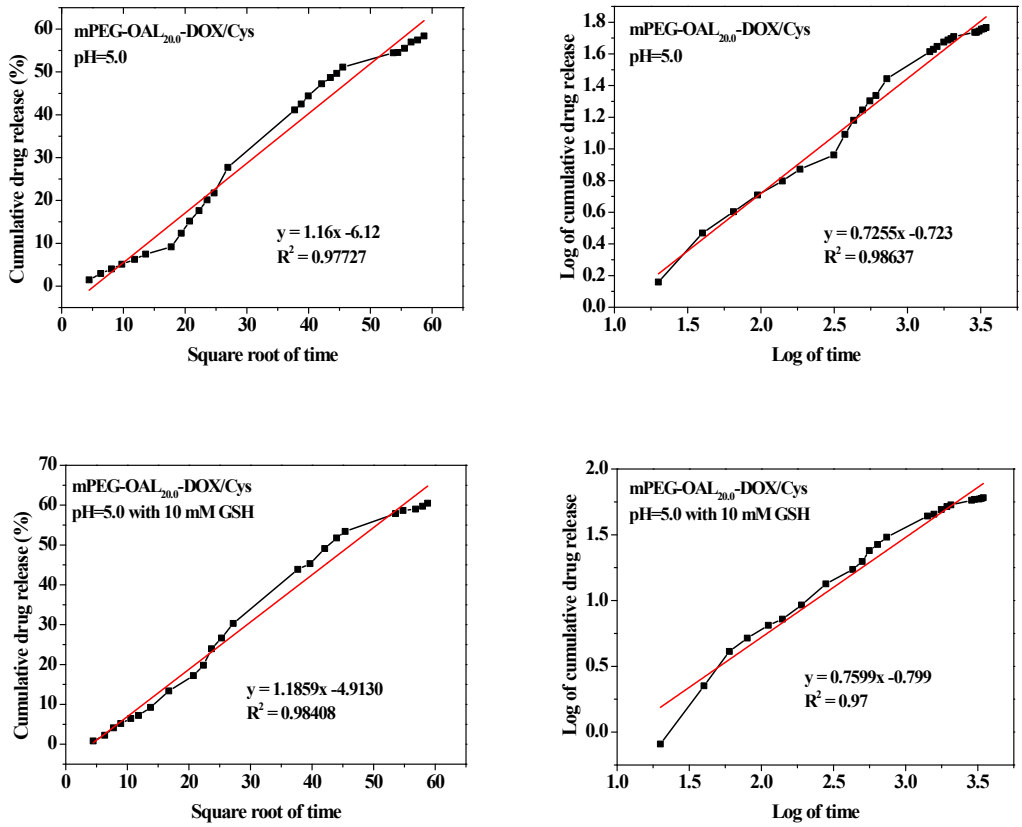


Figure S2. The drug release mechanism fitted with the Higuchi and Korsmeyer-Peppas models.