

A novel core-shell structured magnetic organic-inorganic nanohybrid involving drug-intercalated layered double hydroxides coated on a magnesium ferrite core for magnetically controlled drug release

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Table S1. XRD Structural Parameters of the As-synthesized Samples and Some Related Data

Table S2. Rate Constants and r^2 Coefficients Obtained from Fitting Analyses.

Table S1. XRD Structural Parameters of the As-synthesized Samples and Some Related Data

Samples	d_{003}/nm	d_{110}/nm	$D_{110}/\text{nm}^{1,2}$	D_{003}/nm l	AR^3	Core% ⁴	Drug /% ⁵	Mg/Al ⁶
DIC-LDH	2.37	0.1520	19.73	18.60	1.06	0	52.25(57.24)	2.135
DIC-M	2.35	0.1523	14.42	17.33	0.83	6.34	43.88(42.88)	2.175
DIC-Mix	2.37	0.1520	19.40	18.45	1.05	4.76	50.81(52.45)	2.134

¹ Calculated from Scherrer equation.

² Particle size on (110) direction was obtained by fitting to the Gaussian deconvolution of the (110) reflection peak.

³ AR: aspect ratio, $AR = D_{110} / D_{003}$.

⁴ Estimated from Fe content based on the ICP data taking into account of the experimental determined formula of magnesium ferrite of $\text{MgFe}_{1.03}\text{O}_{2.545}$.

⁵ Determined upon CHN analysis, the values in blanket is obtained from UV measurements.

⁶ Based on ICP analysis.

Table S2. Rate Constants and r^2 Coefficients Obtained from Fitting Analyses.

Fitting results	DIC-M (MF off)	DIC-M (MF on)
First-order equation $\ln(c_t/c_0) = -kt$		
k	0.1466	0.1038
r^2	0.8471	0.9324
¹ Bhaskar equation $\ln(c_0/c_t) = Bt^{0.65}$		
B	0.5443	0.2678
r^2	0.9769	0.9842
Modified Freundlich model $(c_0 - c_t)/c_0 = kt^b$		
k	0.6147	0.4908
b	0.2395	0.2116
r^2	0.9922	0.9950
² Ritger-Peppas model $F = kt^n$		
k	0.6406	0.4927
n	0.2611	0.2154
r^2	0.9972	0.9942

¹ $1 - c_t/c_0 \leq 0.85$ ² $F \leq 0.75$