

# RSC Advances

Electronic Supporting Information

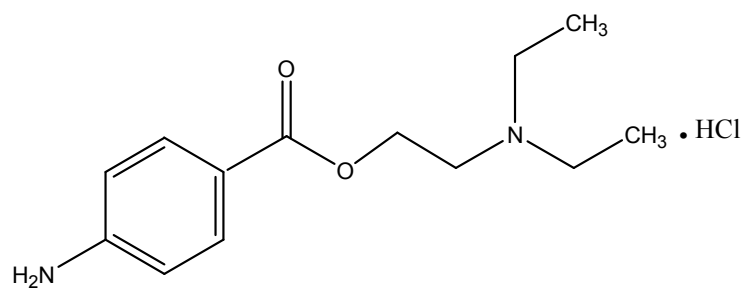
## pH-responsive sulphonated mesoporous silica: A comparative drug release study

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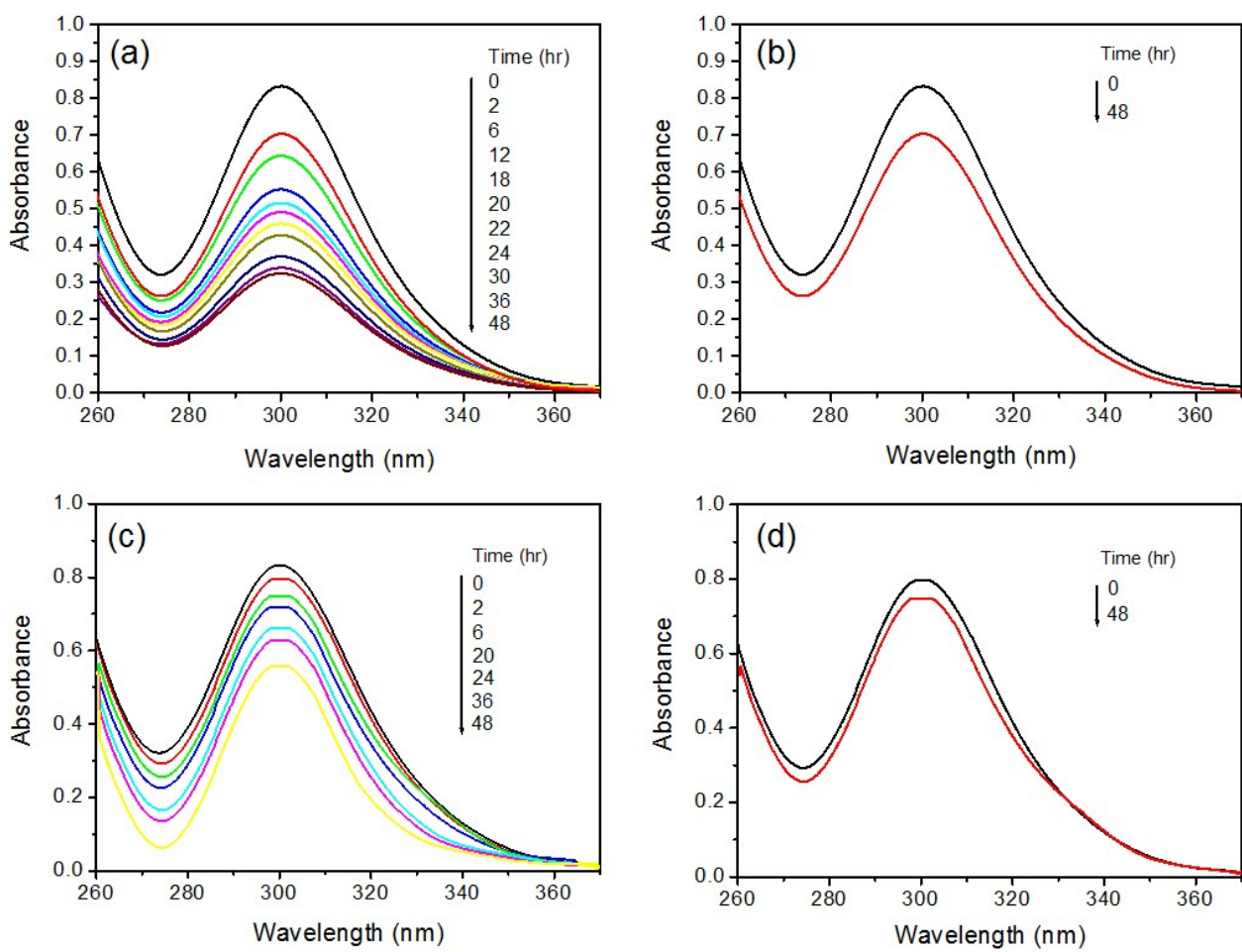
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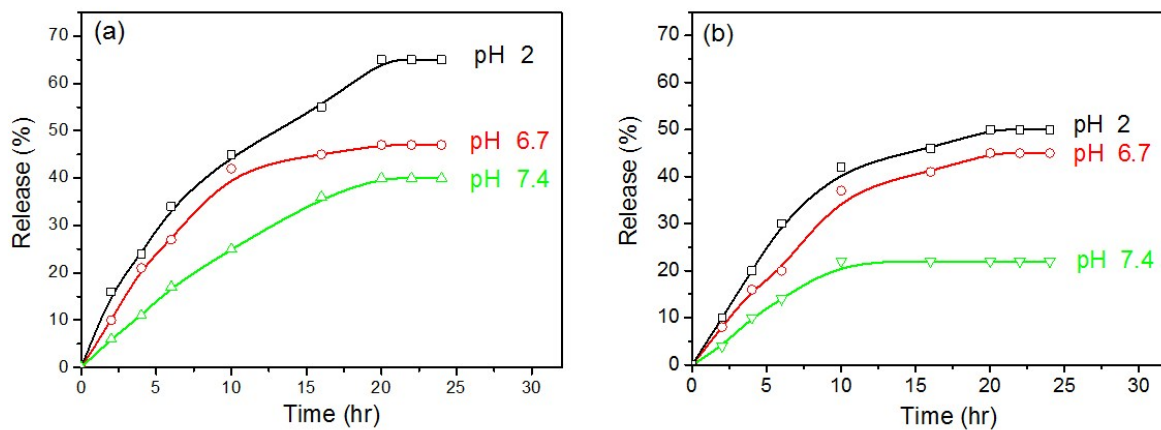
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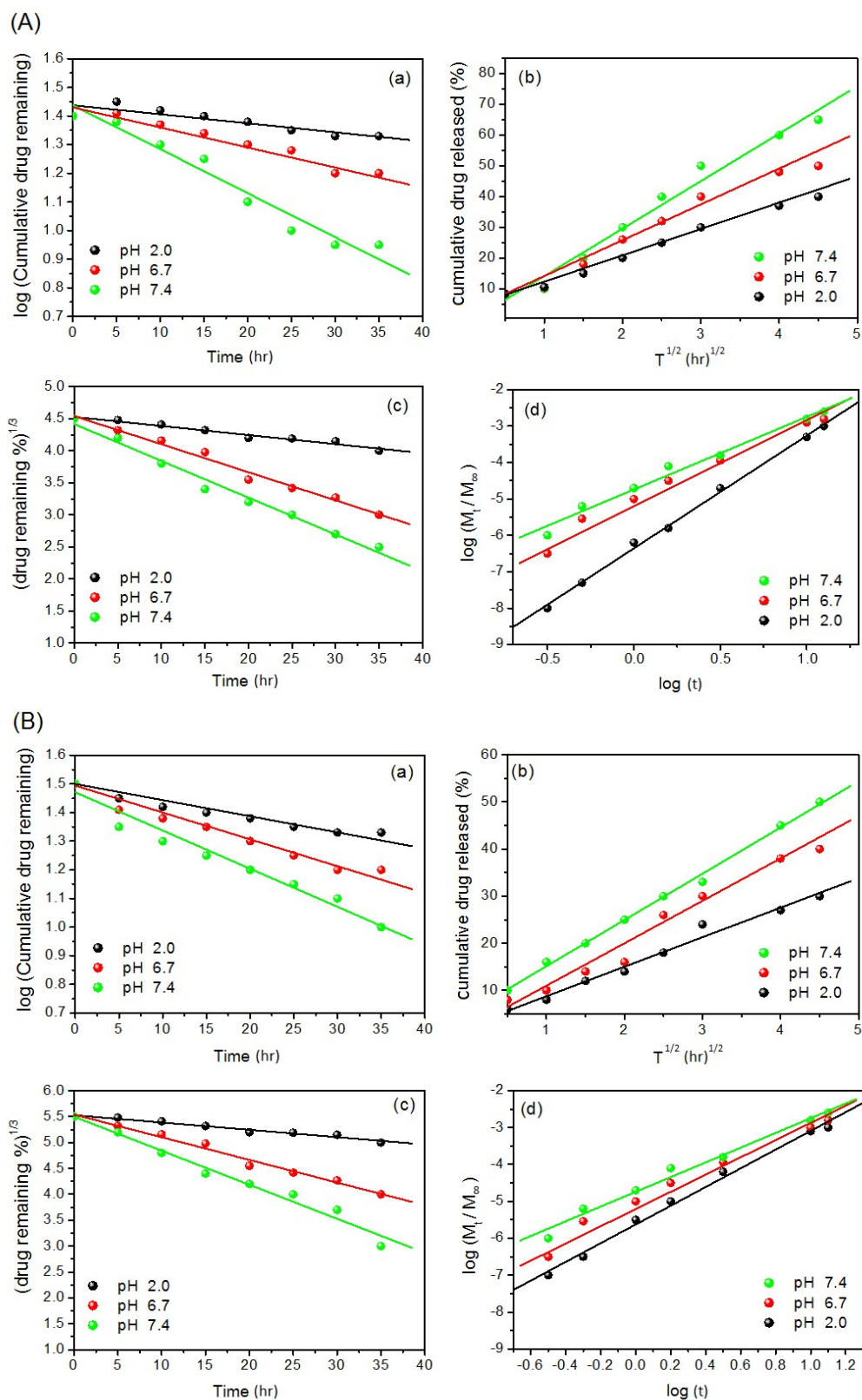
**Scheme S1.** Molecular structure of PrHy.



**Figure S1.** UV-visible absorption spectra of PrHy loaded into (a) KIT-6-SO<sub>3</sub>H, (b) KIT-6 (c) SBA-15-SO<sub>3</sub>H and (d) SBA-15.



**Figure S2.** Time dependence release behavior of PrHy from (a) KIT-6-SO<sub>3</sub>H and (b) SBA-15-SO<sub>3</sub>H at different pH media.



**Figure S3.** Release Kinetic models of PrHy from (A) KIT-6-SO<sub>3</sub>H and (B) SBA-15-SO<sub>3</sub>H: (a) First order, (b) Higuchi, (c) Hixson-Crowell kinetics and (d) Korsmeyer-Peppas.

**Table S1.** Release kinetic parameters of PrHy from KIT-6-SO<sub>3</sub>H.

Release medium	First order		Hoguchi		Hixson-Crowell		Korsmeyer-Peppas		
	$K_I$ (h <sup>-1</sup> )	$R^2$	$K_H$ (%h <sup>-1/2</sup> )	$R^2$	$K_{HC}$ (h <sup>-1</sup> )	$R^2$	$K$ (h <sup>-n</sup> )	$n$	$R^2$
pH 7.4	0.043	0.999	11.92	0.996	0.0477	0.996	0.2153	0.725	0.998
pH 6.7	0.036	0.999	10.14	0.995	0.0324	0.997	0.2063	0.439	0.984
pH 2.0	0.033	0.999	4.94	0.998	0.0234	0.997	0.2262	0.557	0.984

**Table S2:** Release kinetic parameters of PrHy from SBA-15-SO<sub>3</sub>H.

Release medium	First order		Hoguchi		Hixson-Crowell		Korsmeyer-Peppas		
	$K_I$ (h <sup>-1</sup> )	$R^2$	$K_H$ (%h <sup>-1/2</sup> )	$R^2$	$K_{HC}$ (h <sup>-1</sup> )	$R^2$	$K$ (h <sup>-n</sup> )	$n$	$R^2$
pH 7.4	0.090	0.999	9.97	0.997	0.0346	0.996	0.1162	0.611	0.976
pH 6.7	0.079	0.997	9.02	0.994	0.0533	0.994	0.1412	0.322	0.968
pH 2.0	0.069	0.998	4.22	0.995	0.0345	0.990	0.1773	0.432	0.977