

Physically cross-linked pH-responsive hydrogels with tunable formulations for controlled drug delivery

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ESI 1 Feed Composition of PAD Hydrogels

Sample Code	AAc (mol %)	DMAEMA (mol %)	Water (mol %)*
PAD50	50	50	1000
PAD70	70	30	380
PAD80	80	20	380
PAD90	90	10	440

Note: SPS = 0.025 mole % and TEMED = 0.3 mole %; *mol % to total monomer content

ESI 2 Diffusion Exponents (n) and Diffusion Constants (K) of PAD Hydrogels during swelling in buffer solutions of pH 1.2 and 7

Sample code	Diffusion Parameters					
	pH 1.2			pH 7.0		
	K x 10 ³	n	R ²	K x 10 ³	n	R ²
PAD70	14.3	0.34	0.98	3.2	0.43	0.98
PAD80	27.4	0.29	0.98	2.1	0.42	0.93
PAD90	190.1	0.13	0.97	92.1	0.05	0.93

ESI 3 In-vitro BSA release behavior of PAD hydrogels.

Sample code	Cumulative release (%) of BSA in			
	pH 1.2		pH 7.4	
	mg/g	%	mg/g	%
PAD70	15.0± 2.9	5.5 ±0.3	200.0 ±13	73.1 ±2.6
PAD80	30.5± 4.2	3.7 ±0.5	270.0 ±9.4	32.7 ±1.9
PAD90	50.5± 7.0	4.1 ±0.8	310.7± 13	25.3± 2.6