

Supplementary Material

β -Cyclodextrin modified hydrogels of kappa-carrageenan for methotrexate delivery

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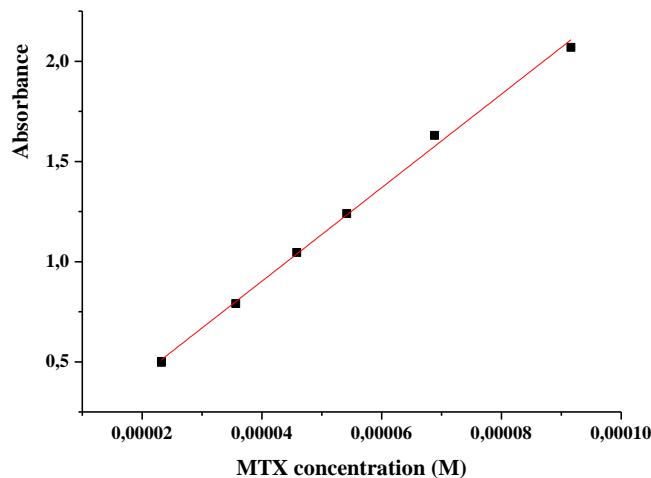


Figure 1. SI. Calibration curve for spectrophotometric determination of MTX in phosphate buffer.

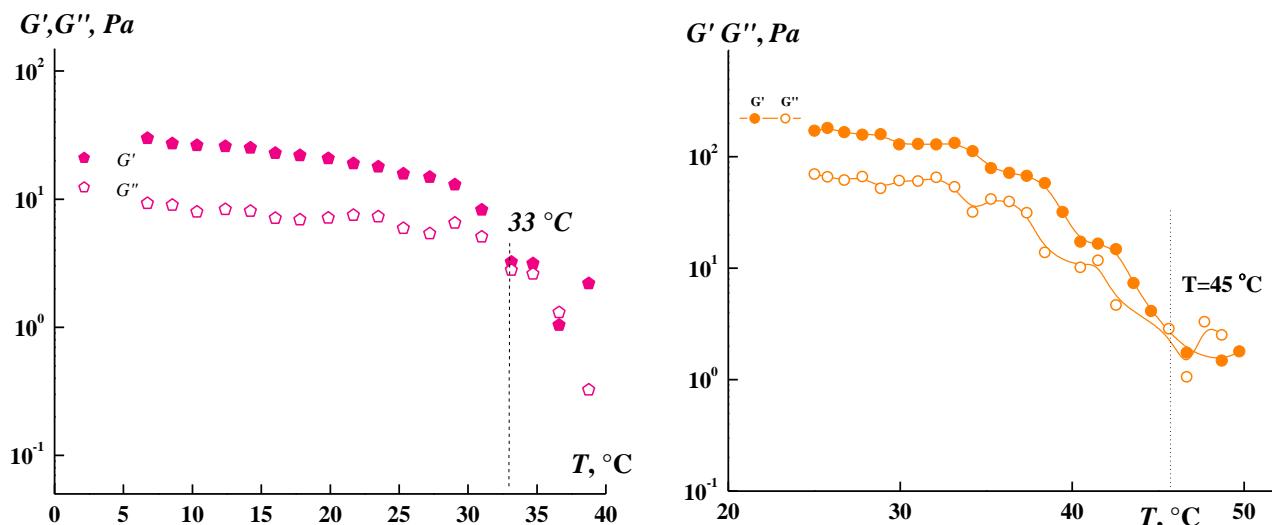


Figure 2. SI. Temperature dependence of the storage (G') and loss (G'') moduli for the kCR gels (a – 1 wt.% kCR; b – 1.25 wt.% kCR).

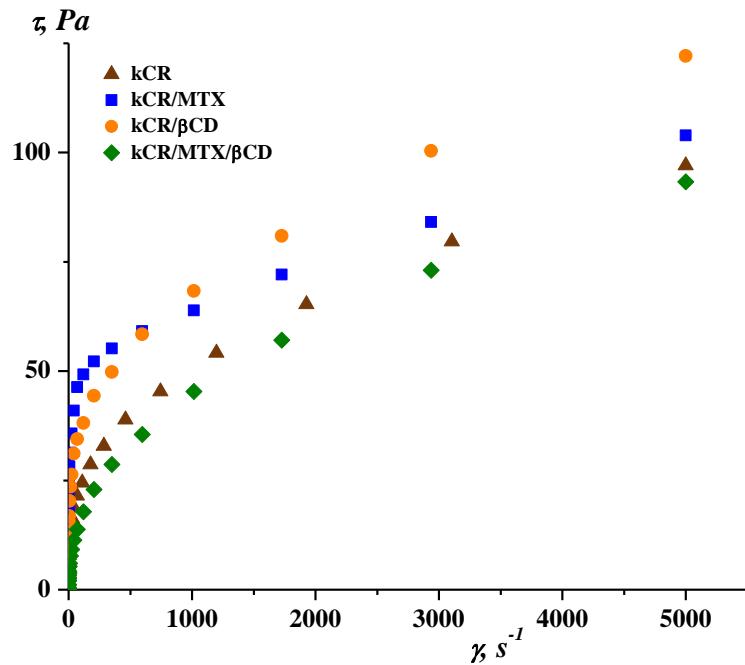


Figure 3. SI. Flow curves for gels under study.

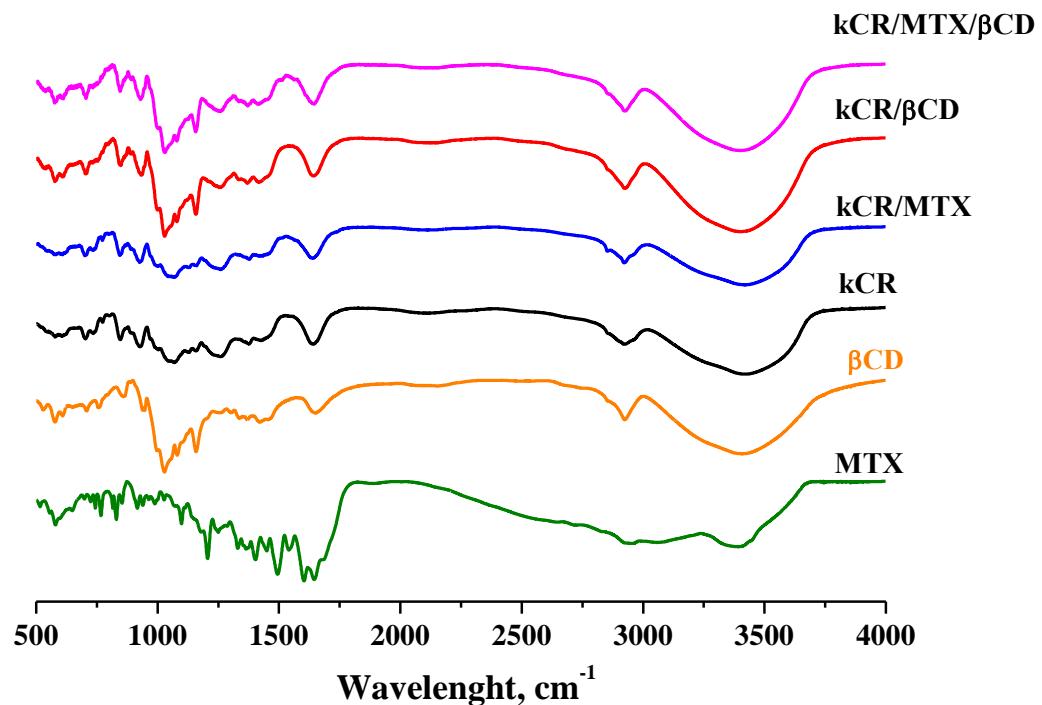


Figure 4. SI. FTIR spectra of freeze-dried gels under study.

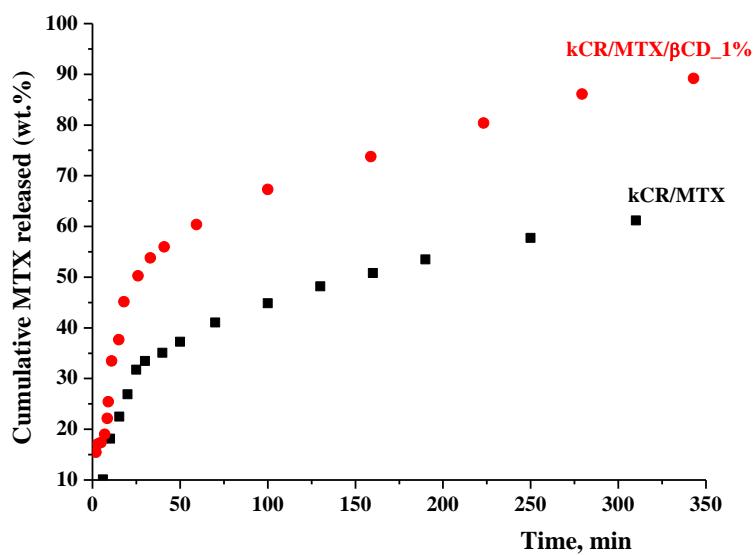


Figure 5. SI. Release profiles of MTX from kCR gels (1.25 wt.%) in phosphate buffer ($\text{pH}=7.4$) at 37°C (concentration of MTX in the gels is the same).

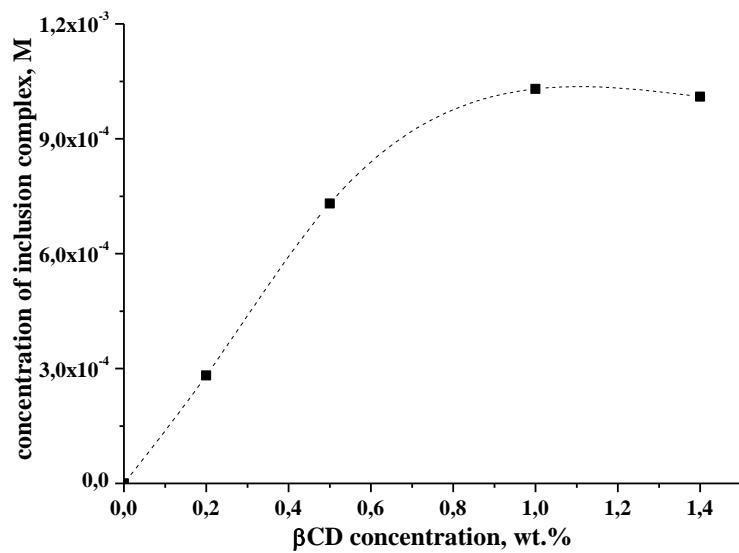


Figure 6. SI. Concentration of the inclusion complexes of MTX with βCD formed in solution *versus* βCD concentration.

Table 1. SI. Content of the components in gels on the basis of kCR.

Gel	MTX, M	βCD , wt.%	kCR, wt.%
kCR/MTX	$2.0 \cdot 10^{-4}$	0	1.25
kCR/MTX/ $\beta\text{CD}_{0.2\%}$	$5.5 \cdot 10^{-4}$	0.2	1.25
kCR/MTX/ $\beta\text{CD}_{0.5\%}$	$1.0 \cdot 10^{-3}$	0.5	1.25
kCR/MTX/ $\beta\text{CD}_{1\%}$	$1.20 \cdot 10^{-3}$	1.0	1.25
kCR/MTX/ $\beta\text{CD}_{1.4\%}$	$1.13 \cdot 10^{-3}$	1.4	1.25

Table 2. SI. AUC_{0-6.7h} *in vitro* of permeated MTX from the gels under study.

Gel	AUC _{0-6.7h} (wt.%/min)	AUC _{0-6.7h(gel)} /AUC _{0-6.7h(kCR/MTX)}
kCR/MTX	4090	1
kCR/MTX/ β CD _{_1%}	3850	0.94
kCR/MTX/ β CD _{_1.4%}	3441	0.84
iCR/MTX	2552	0.62