

Drug Delivery from Hyaluronic Acid–BDDE Injectable Hydrogels for Antibacterial and Anti-Inflammatory Applications

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Supplementary material

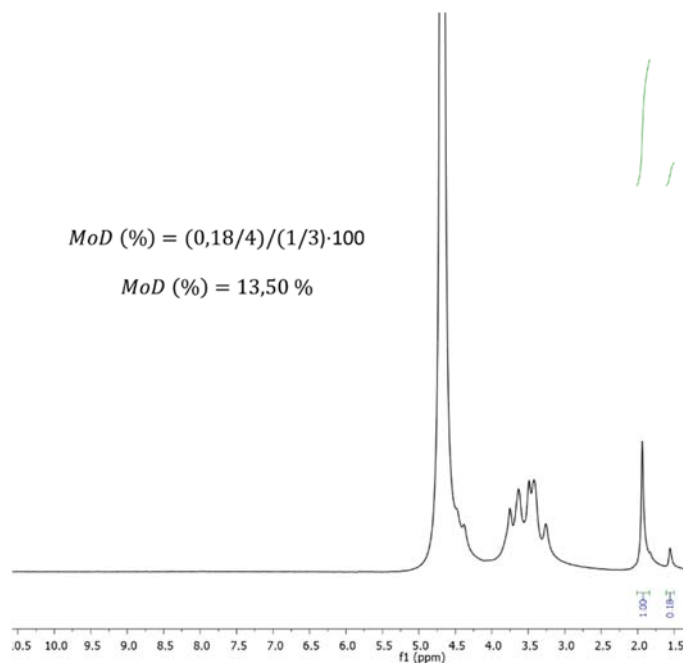


Figure S1. Proton nuclear magnetic resonance (¹H-NMR) spectra of HA-BDDE-1 hydrogel for MoD determination.

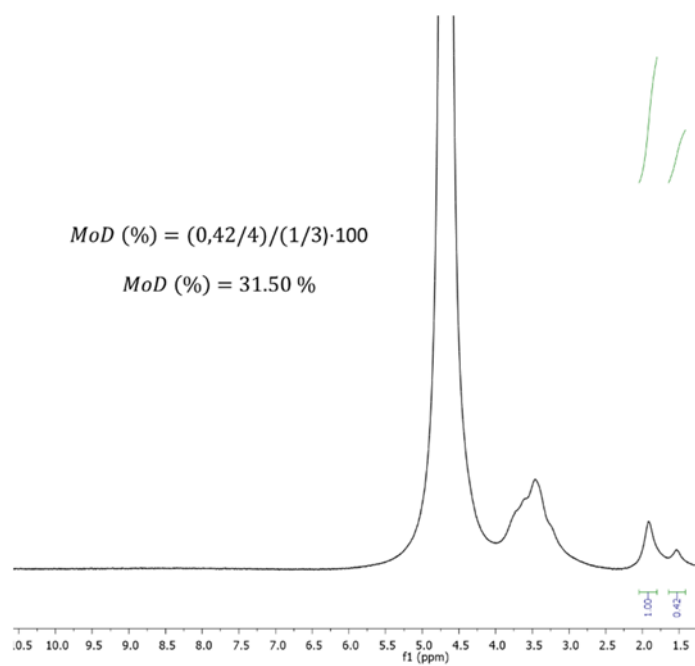


Figure S2. Proton nuclear magnetic resonance (^1H -NMR) spectra of HA-BDDE-2 hydrogel for MoD determination.

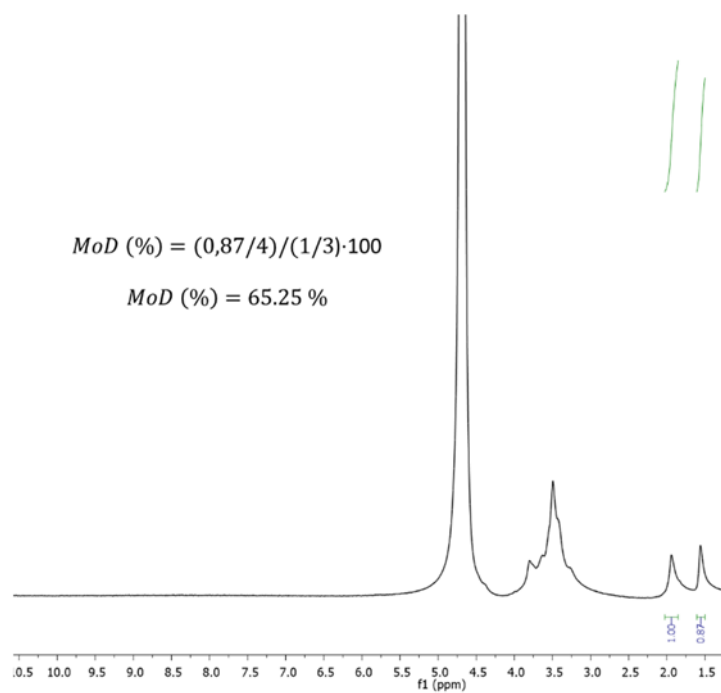


Figure S3. Proton nuclear magnetic resonance (^1H -NMR) spectra of HA-BDDE-3 hydrogel for MoD determination.

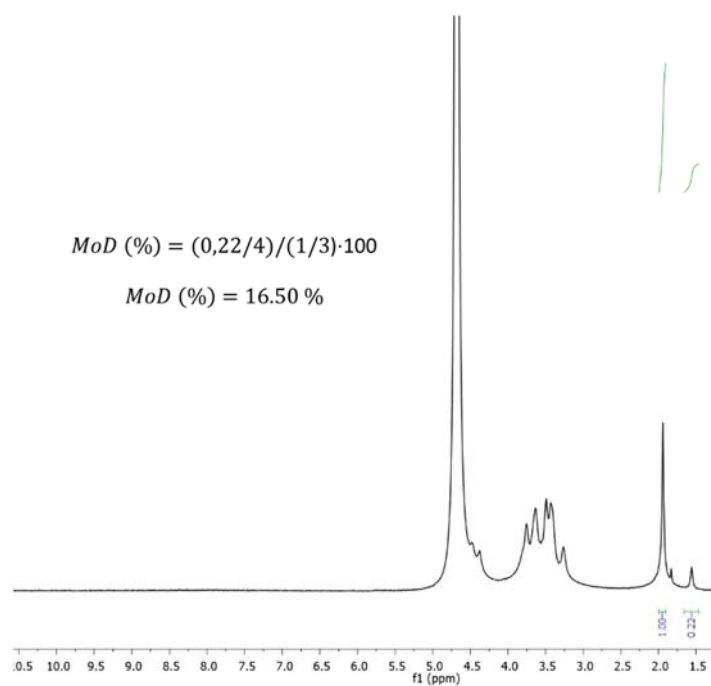


Figure S4. Proton nuclear magnetic resonance (^1H -NMR) spectra of HA-BDDE-4 hydrogel for MoD determination.

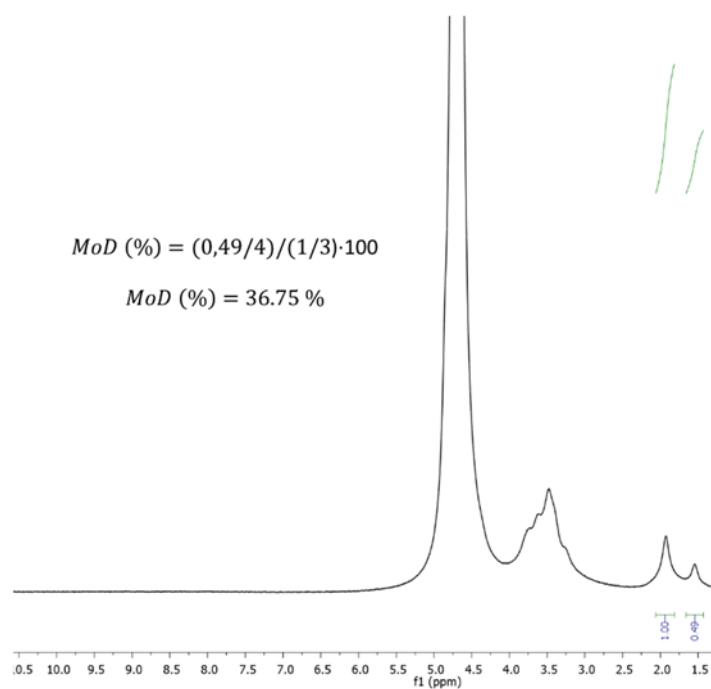


Figure S5. Proton nuclear magnetic resonance (^1H -NMR) spectra of HA-BDDE-5 hydrogel for MoD determination.

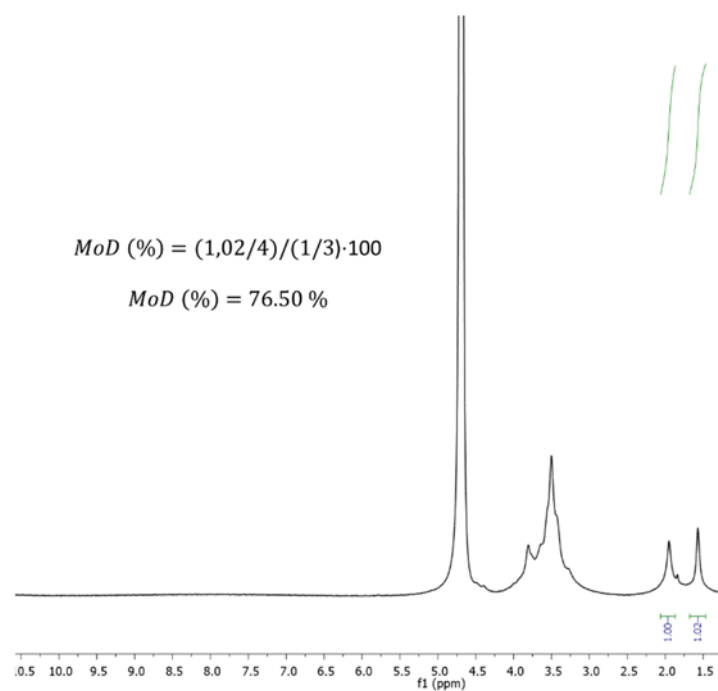


Figure S6. Proton nuclear magnetic resonance (^1H -NMR) spectra of HA-BDDE-6 hydrogel for MoD determination.

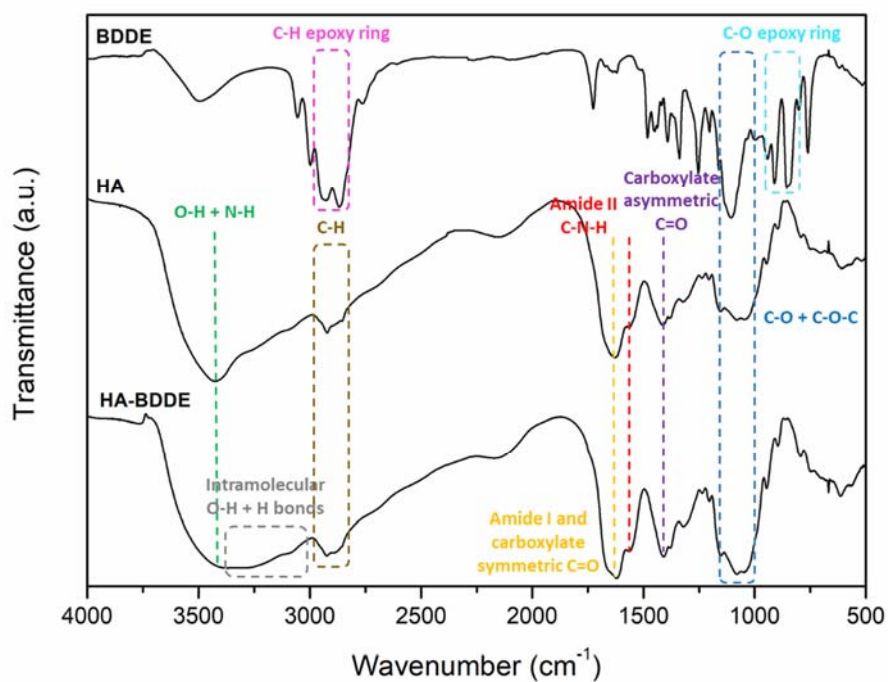


Figure S7. FTIR spectra of BDDE, HA and HA-BDDE hydrogels between 4000–500 cm^{-1} .

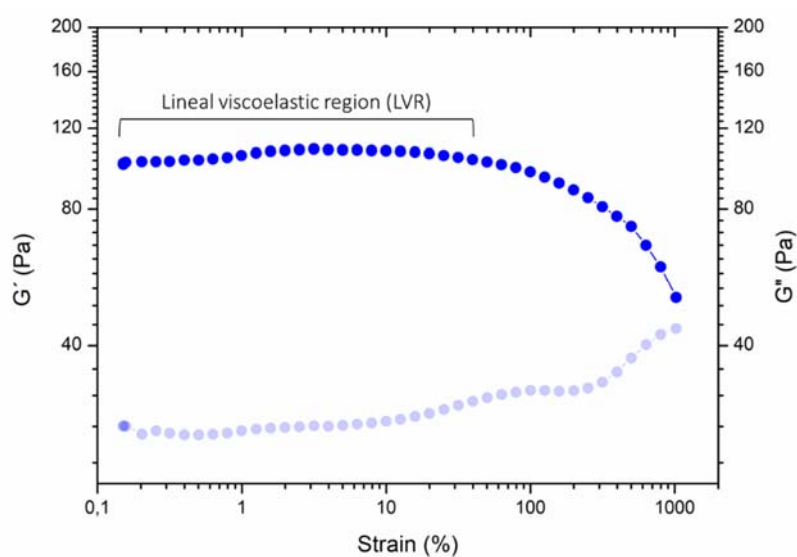
Table S1. Acute systemic toxicity results of HA-BDDE-4 (●) hydrogel and control group.

HA-BDDE-4 hydrogel – Treated group							
Animal number	Start weight (g)	End weight (g)	Clinical symptoms at different times (h)				
			0	4	24	48	72
1	23.6	27.5	0	0	0	0	0
2	22.8	27.4	0	0	0	0	0
3	20.4	23.2	0	0	0	0	0
4	21.5	25.3	0	0	0	0	0
5	23.4	27.0	0	0	0	0	0
Cottonseed oil - Control group							
Animal number	Start weight (g)	End weight (g)	Clinical symptoms at different times (h)				
			0	4	24	48	72
1	23.6	27.6	0	0	0	0	0
2	21.7	25.5	0	0	0	0	0
3	21.3	26.3	0	0	0	0	0
4	23.5	26.1	0	0	0	0	0
5	20.2	24.4	0	0	0	0	0

0: no symptoms.

Table S2. Physicochemical properties of CFX, TCN, AMX and ASS drugs.

Drug	Molecular weight (g/mol)	Water solubility (mg/mL, 25 °C)	log Kow	pKa	Net charge (pH 7.4)
CFX	446.4	> 100	− 0.80	pKa (1) 2.5	--
TCN	480.9	22.0	− 1.30	pKa (1) 3.3	+
				pKa (2) 7.7	
				pKa (3) 9.5	
AMX	365.4	4.0	0.87	pKa (1) 2.4	-
				pKa (2) 7.4	
				pKa (3) 10.6	
AAS	180.2	3.3	1.19	pKa (1) 3.5	--

**Figure S8.** G' and viscous G'' versus strain of HA-BDDE-1 (●) for LVR determination by amplitude sweep.