Investigation of the Real-Time Release of Doxycycline from PLA-Based Nanofibers

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Table S1. Pharmaco-kinetic parameters for Doxy release by Zero-order, Higuchi, First-order, and Hixson-Crowell models obtained by DPV and UV measurements.

	Zero-order				Higuchi			
	DPV		UV		DPV		UV	
Samples	k_0	R^2	k_0	R^2	k_H	R^2	k_H	k_H
PLA_Doxy_3	0.0143	0.876	0.0084	0.919	0.3471	0.92	0.185	0.185
PLA_Doxy_7	0.0096	0.615	0.0136	0.666	0.2542	0.791	0.3517	0.3517
PLA_Doxy_12	0.0066	0.929	0.0095	0.754	0.1595	0.98	0.2393	0.2393
PLA/Hap_Doxy_3	0.0273	0.75	0.0142	0.749	0.696	0.896	0.3618	0.3618
PLA/Hap_Doxy_7	0.0193	0.762	0.0175	0.933	0.491	0.906	0.4173	0.4173
PLA/Hap_Doxy_12	0.0119	0.806	0.0066	0.644	0.297	0.928	0.1715	0.1715
	First-order				**Hixson-Crowell**			
	DPV		UV		DPV		UV	
	k_I	R^2	k_I	R^2	k_{HC}	R^2	k_{HC}	R^2
PLA_Doxy_3	-7×10^{-5}	0.881	-4×10^{-5}	0.919	2×10^{-4}	0.879	0.0001	0.919
PLA_Doxy_7	-4×10^{-5}	0.618	-6×10^{-5}	0.6727	2×10^{-4}	0.617	0.0002	0.67
PLA_Doxy_12	-3×10^{-5}	0.93	-4×10^{-5}	0.759	1×10^{-4}	0.931	0.0002	0.757
PLA/Hap_Doxy_3	-1×10^{-4}	0.761	-7×10^{-5}	0.758	5×10^{-4}	0.758	0.0002	0.755
PLA/Hap_Doxy_7	-9×10^{-5}	0.769	-8×10^{-5}	0.937	3×10^{-4}	0.766	0.0003	0.936
PLA/Hap_Doxy_12	-5×10^{-5}	0.762	-3×10^{-5}	0.646	2×10^{-4}	0.808	0.0001	0.646

Table S2. The results of the analysis of variance (ANOVA) for the Doxy release investigated by DPV and UV measurements, and fitted by Zero-order, Higuchi, First-order, Hixson-Crowell, and Korsmeyer-Peppas kinetic models.

Source of Variation	SS	df	MS	F	P-value	F_{crit}
Anova: Single Factor in terms of R^2						
Kinetic models 1-4	0.096783	7	0.013826	1.248613	0.300095	2.249024
Kinetic models 1-5	0.223502	9	0.024834	2.500466	0.019061	2.073351
Anova: Two-Factor With Replication in terms of R^2						
Kinetic models 1-5	0.20871512	4	0.052179	5.253823	0.001302	2.557179
Investigation method DPV and UV	0.00903563	1	0.009036	0.909787	0.34476	4.03431
Interactions between kinetic models and investigation methods	0.0057515	4	0.001438	0.144778	0.964478	2.557179
Anova: Single Factor in terms of kinetic constant, k						
Kinetic models 1-5	80.38197	9	8.93133	7.145079	1.42E-06	2.073351
Anova: Two-Factor With Replication in terms of kinetic constant, k						
Kinetic models 1-5	78.6933	4	19.67332	15.73869	2.12E-08	2.557179
Investigation method DPV and UV	0.257921	1	0.257921	0.206337	0.651619	4.03431
Interactions between kinetic models and investigation methods	1.430755	4	0.357689	0.286152	0.885601	2.557179