

**Biodegradable Polymeric Nano formulation of Acyclovir and Acyclovir prodrug for  
Enhanced Therapeutic Efficacy Against Herpes Simplex Virus Infections**

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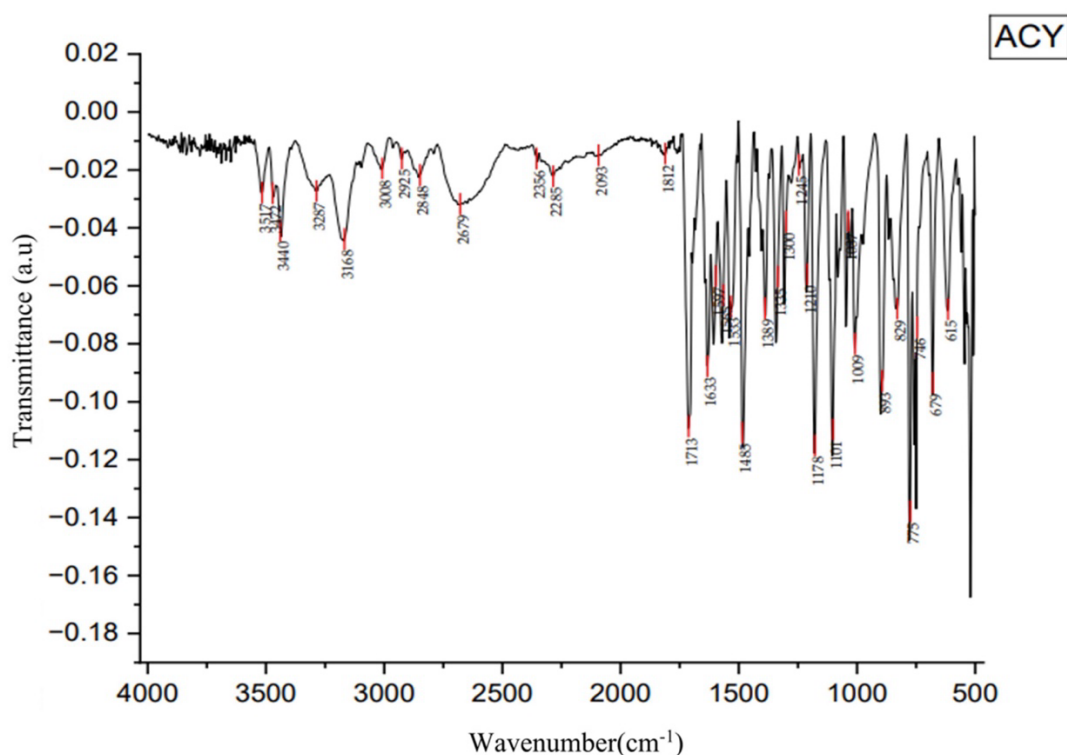
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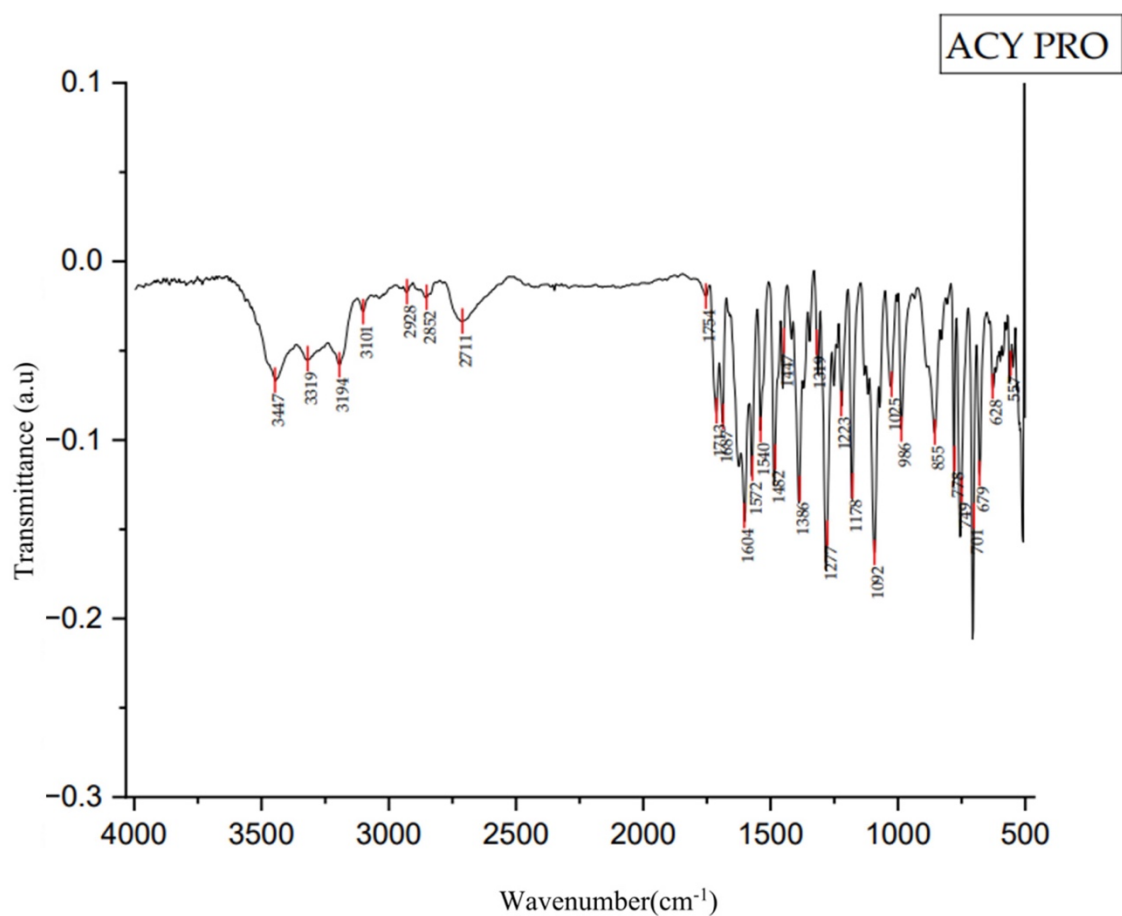
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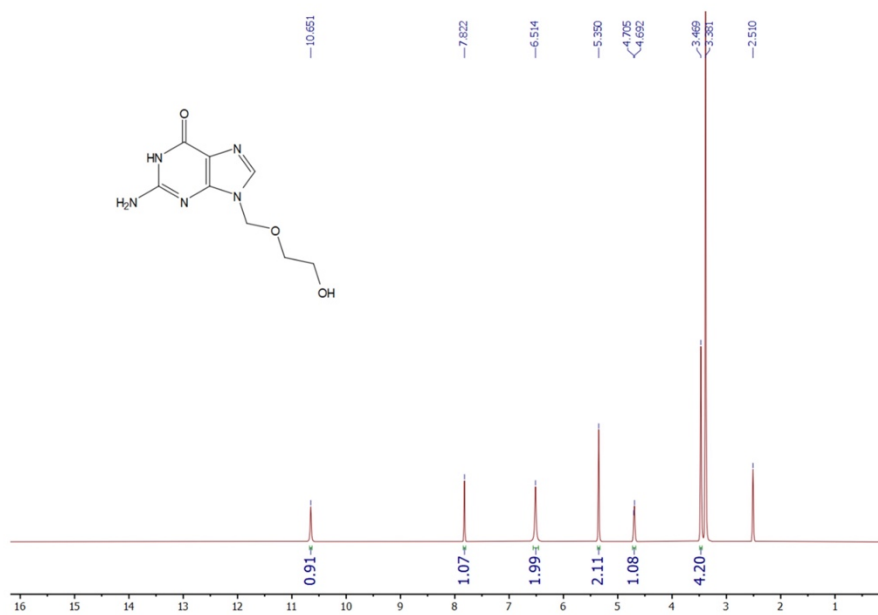
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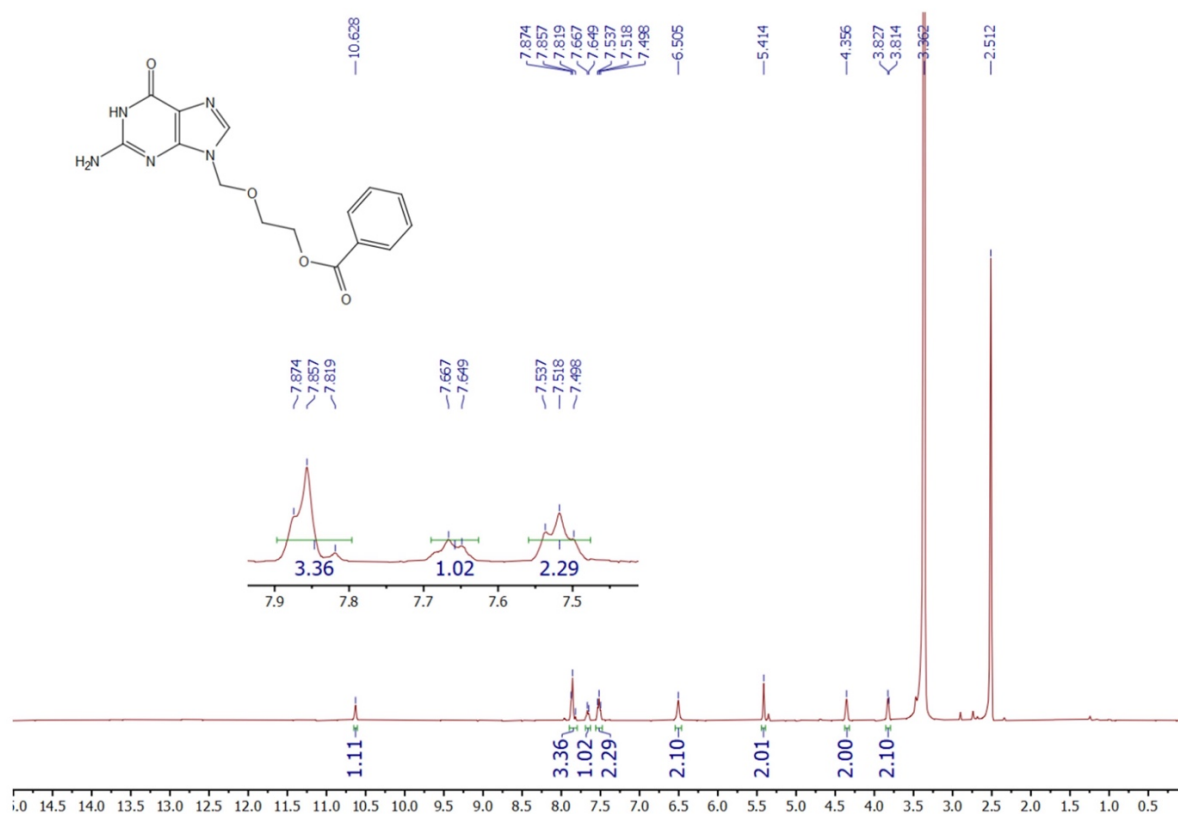
**Supplementary Fig. S1: FTIR Spectra of ACY**



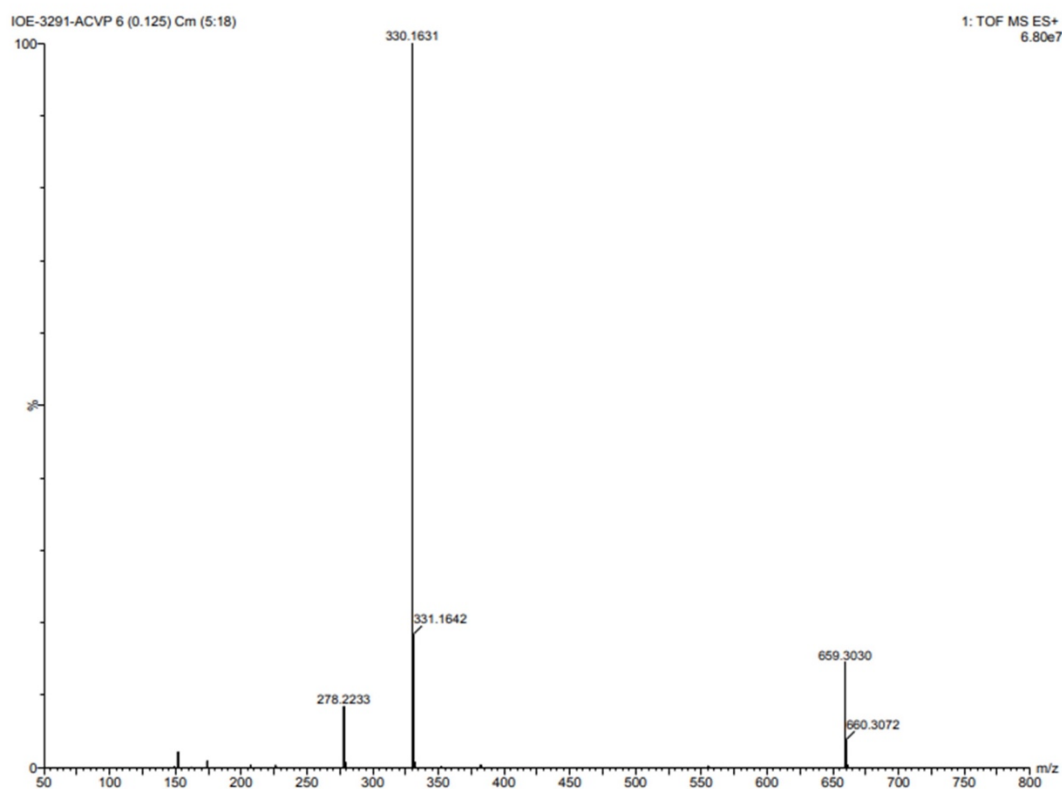
**Supplementary Fig. S2: FTIR Spectra of ACPD**



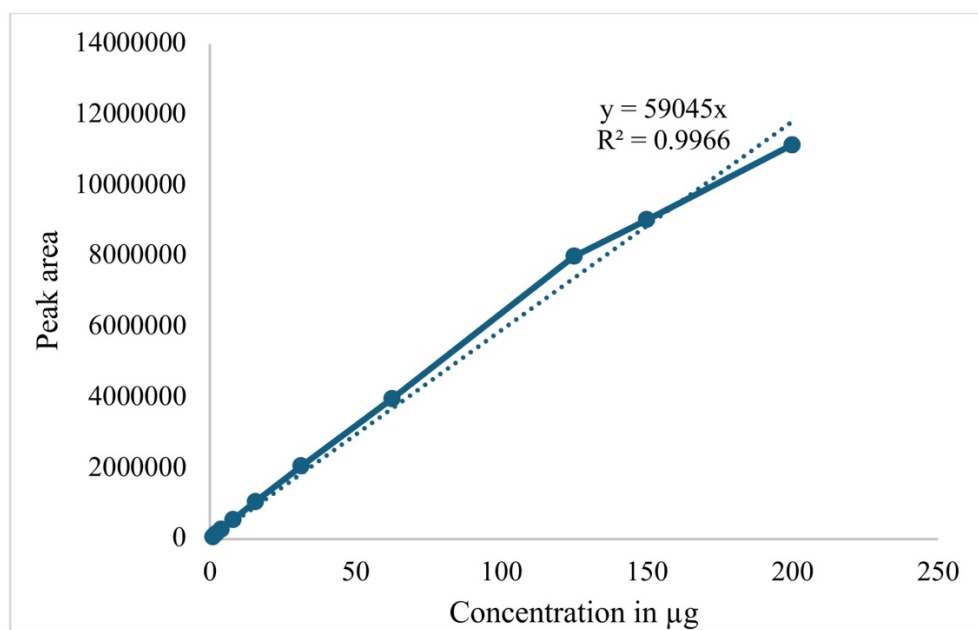
**Supplementary Fig. S3:** <sup>1</sup>H-NMR spectra of ACY



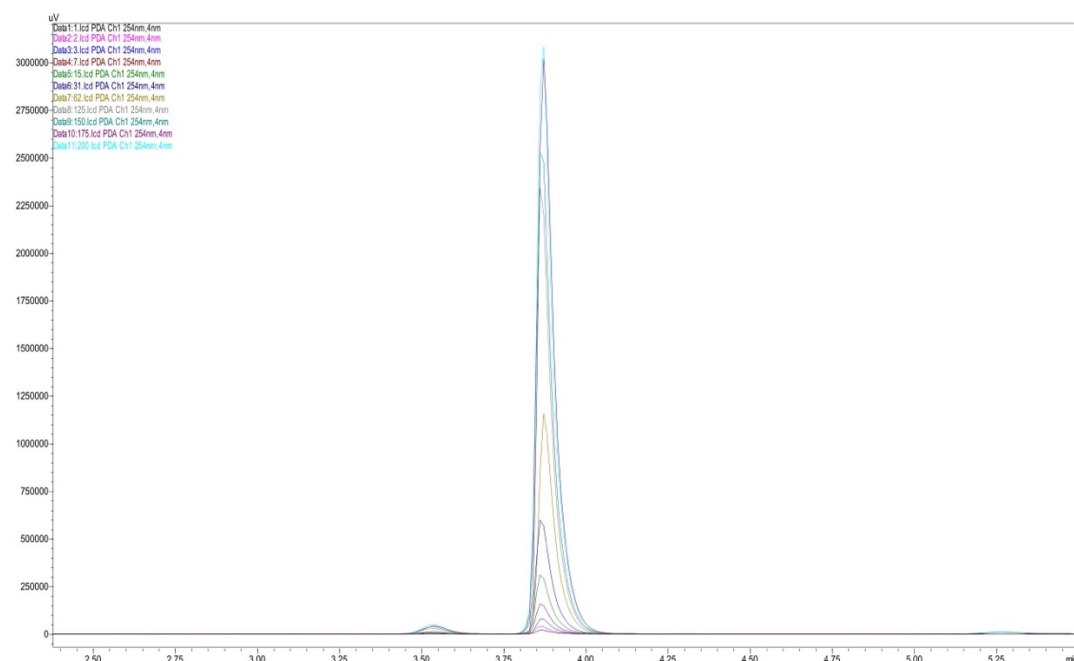
**Supplementary Fig. S4:**  $^1\text{H}$ -NMR spectra of ACPD



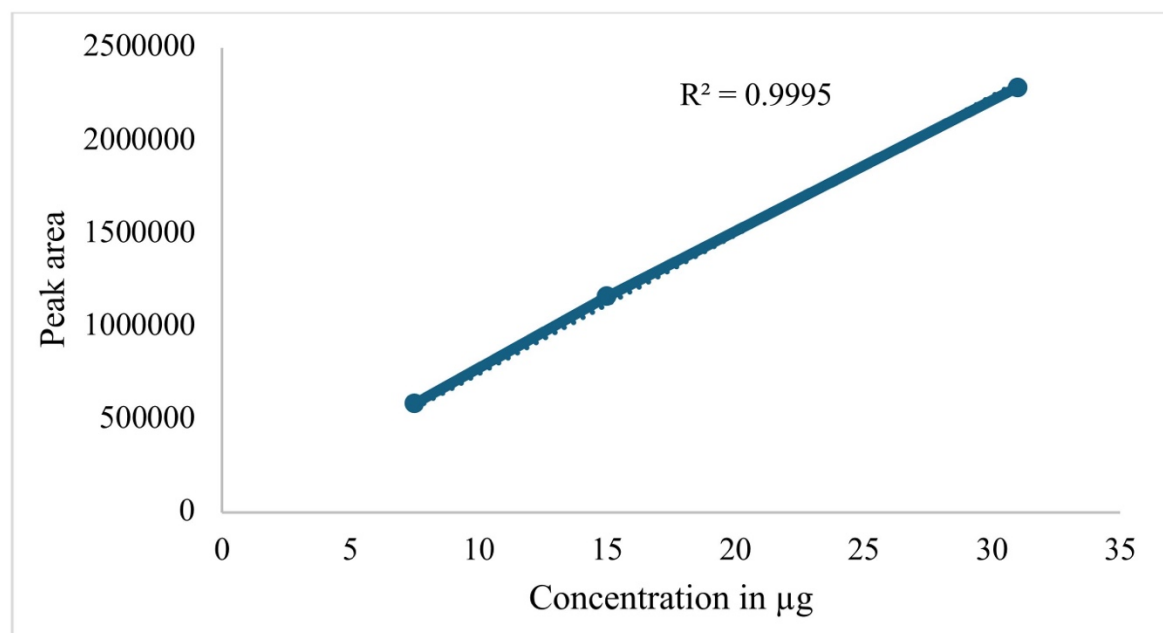
**Supplementary Fig. S5:** Mass spectra of ACPD



**Supplementary Fig. S6:** Calibration plot of ACY (0.976-200 $\mu\text{g}$ )



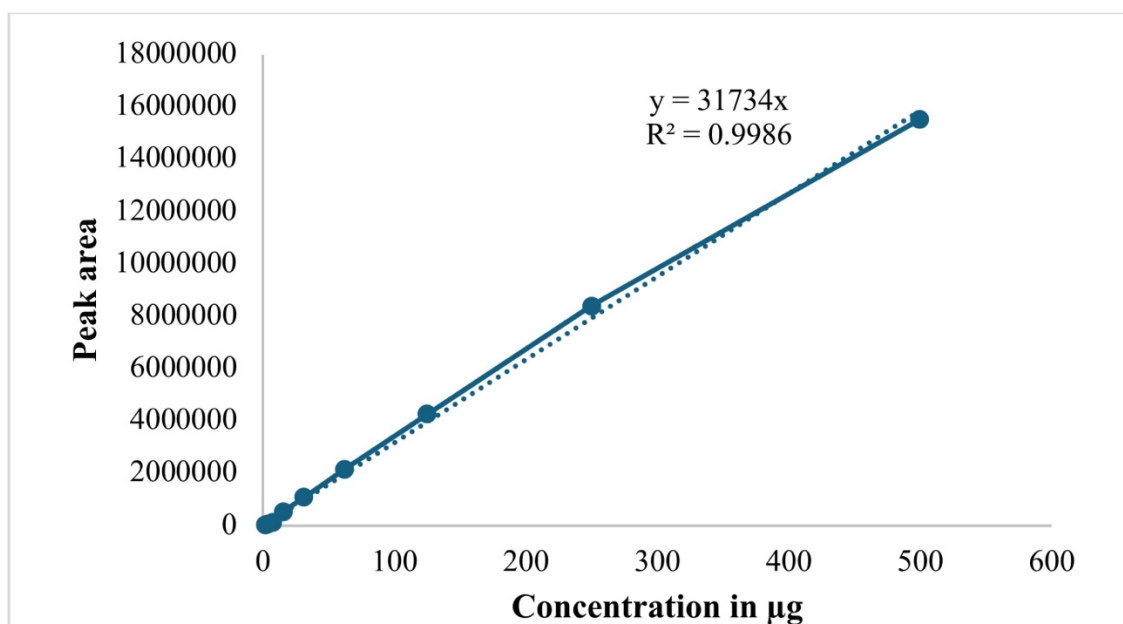
**Supplementary Fig. S7:** Graph of ACY (chromatogram stacked)

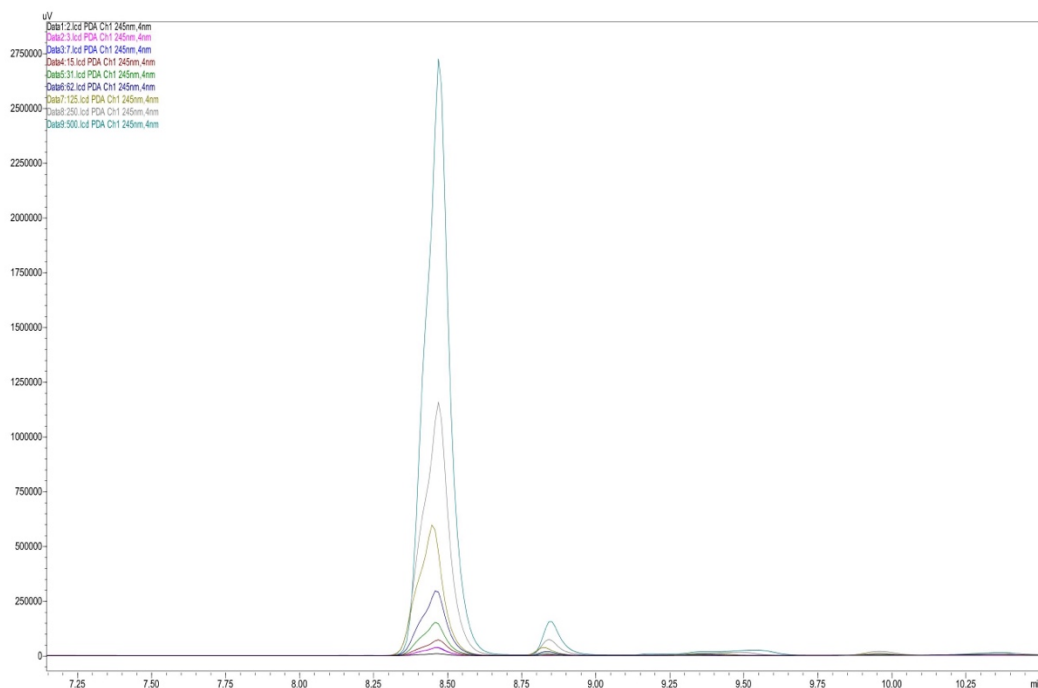


**Supplementary Fig. S8:** Precision plot Day 1

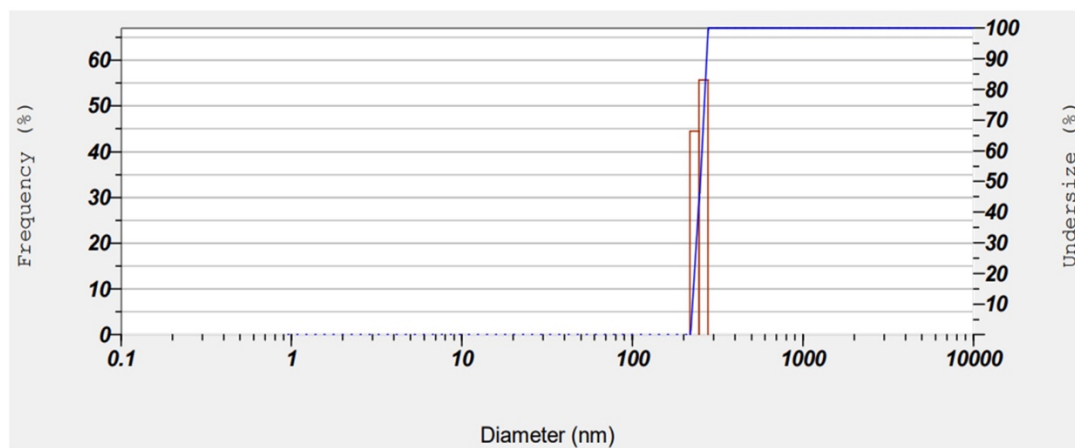
**Supplementary Table S1:** Precision Readings of 3 different concentrations Day 1

Analyte Level Concentration (ug/ml)	Trial 1	Mean	RSD	% RSD
7.81	585061	584366	1398.63	0.239
7.81	585281			
7.81	582756			
15.62	1163618	1163262	885.41	0.076
15.62	1162254			
15.62	1163914			
31.25	2287032	2287239	2039.91	0.089
31.25	2285311			
31.25	2289375			

**Supplementary Fig. S9:** Calibration plot of ACPD (0.976-500µg)

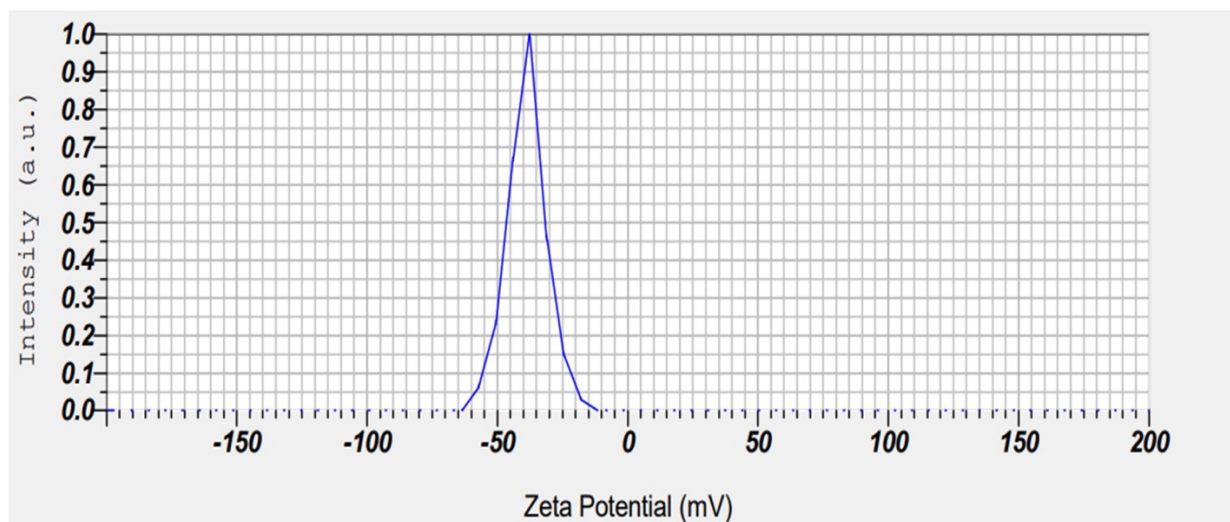


**Supplementary Fig. S10:** Stacked chromatogram of ACPD

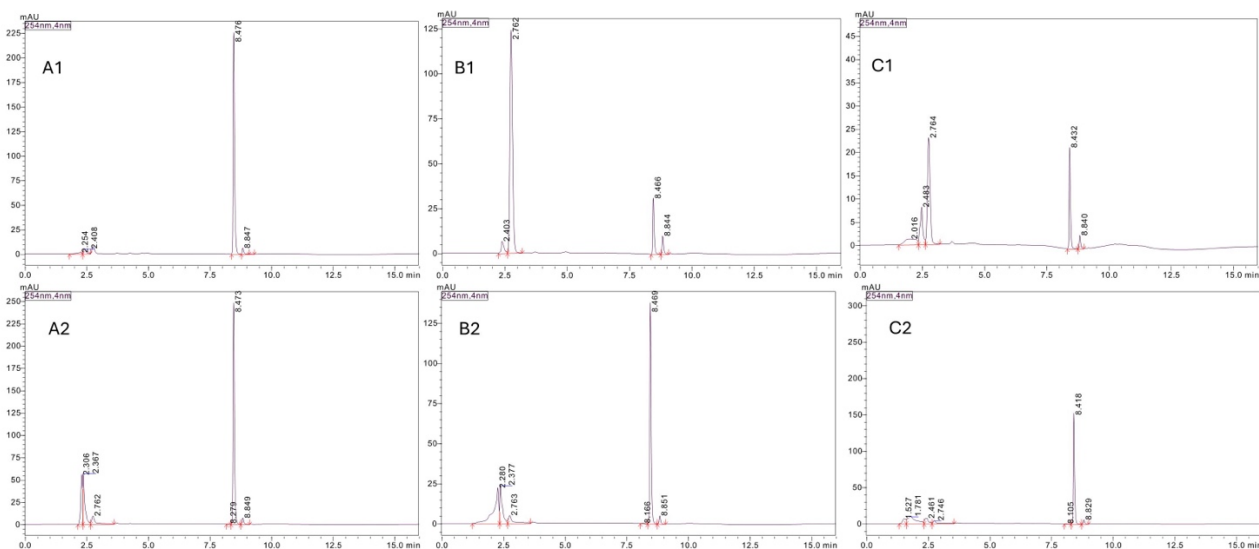


**Supplementary Fig. S11:** Particle size distribution graph of prepared plain PLGA nanoformulation

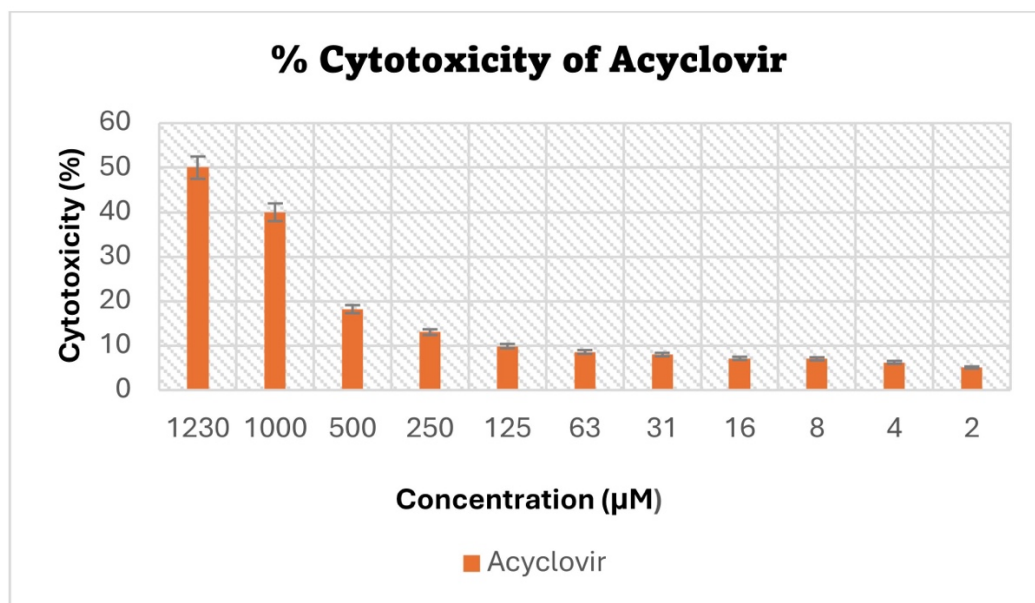




**Supplementary Fig. S12:** Zeta graph of prepared plain PLGA nanoformulation showing negative surface charge



**Supplementary Fig. S13:** RP-HPLC chromatograms show converted ACY (RT 2.7 min) from ACPD NPs in *in vitro* release studies: A1) 2 hours at pH 4.5, A2) 2 hours at pH 7.4, B1) Day 14 at pH 4.5, B2) Day 14 at pH 7.4, C1) Day 28 at pH 4.5, and C2) Day 28 at pH 7.4



**Supplementary Fig. S14:** Graph showing cytotoxicity of Acyclovir at different concentrations



**Supplementary Fig. S15:** Chromatogram showing breakdown of ACPD to ACY