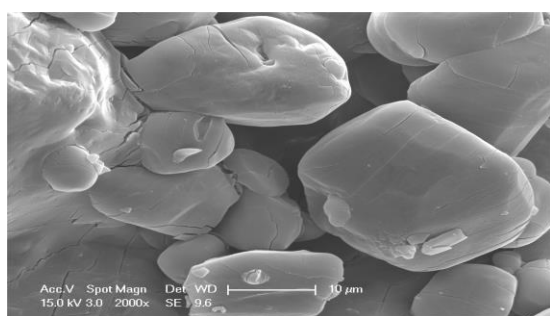


Supplementary Materials

Table S1. Zeta Potentials of blank-NS formulations.

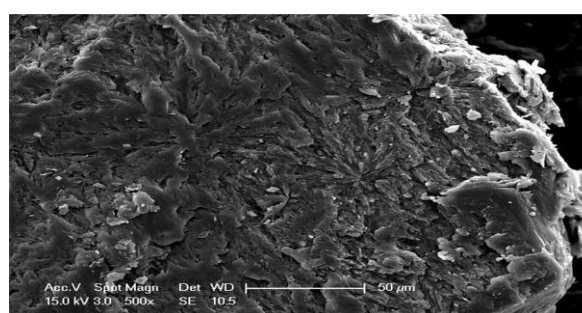
Blanks	Zeta Potential (24 h)	Zeta Potential (30 Days)	Zeta Potential (90 Days)
Q-S154	-17.7 ± 0.06	-11.20 ± 0.35	-6.45 ± 0.28
Q-C888	-8.90 ± 1.09	-11.4 ± 0.65	-4.62 ± 0.66
Q-CHD 5	-12.9 ± 0.20	-8.75 ± 0.59	-6.56 ± 0.35

Key: QHCl = Quinine hydrochloride, S154 = Softisan® 154, C888 = Compritol® 888 ATO, CHD 5 = Compritol® HD 5 ATO. Q-S154 = blank formulation of QHCl made with S154; Q-C888 = blank formulation of QHCl made with C888; Q-CHD 5 = blank formulation of QHCl made with CHD 5.



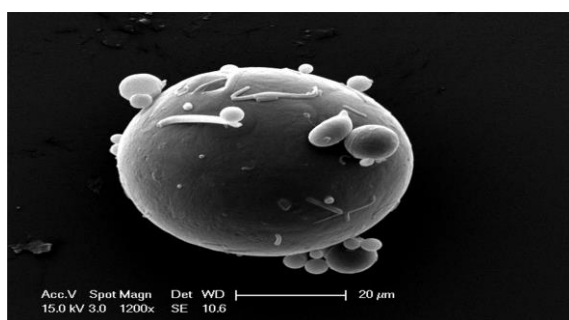
Quinine Hydrochloride

2000 X



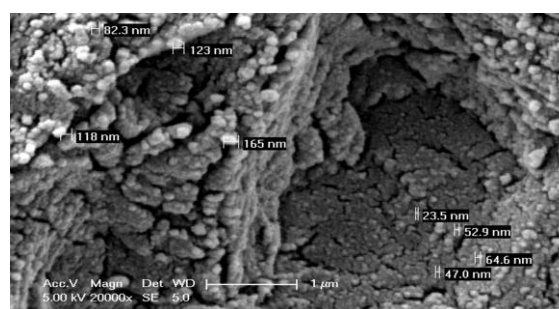
Softisan®154

500 X



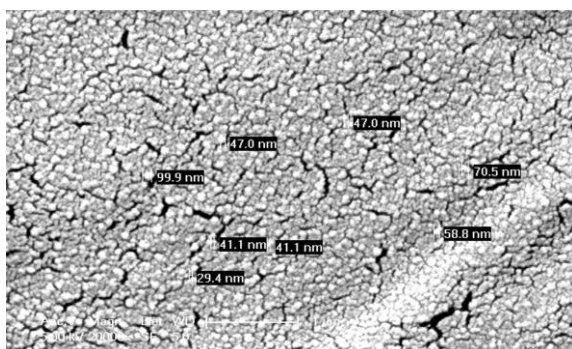
Phospholipon® 90H

1200 X



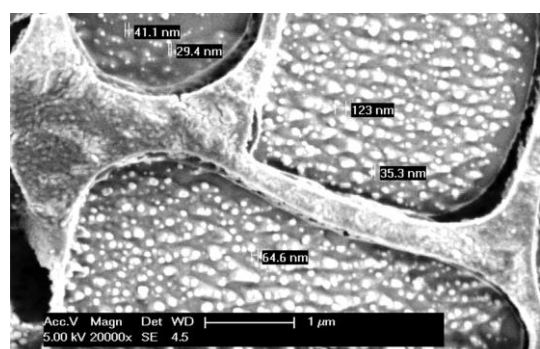
Q9

20,000x



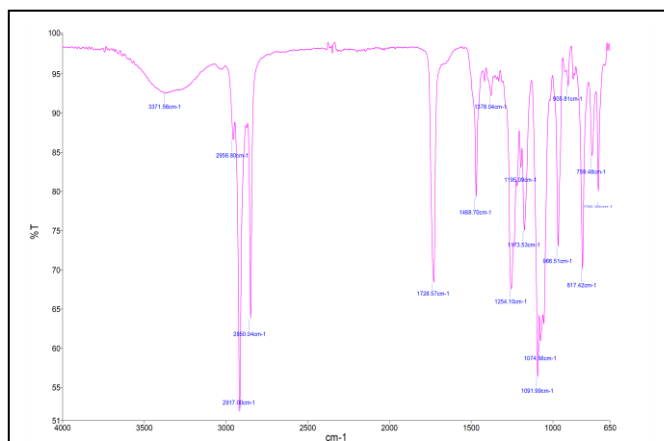
Q7

20,000x

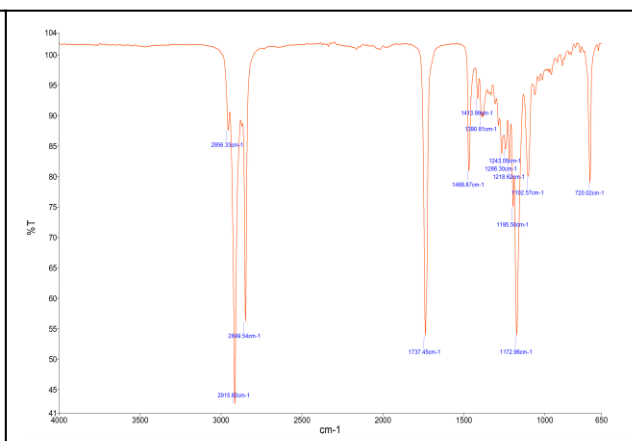


Q12

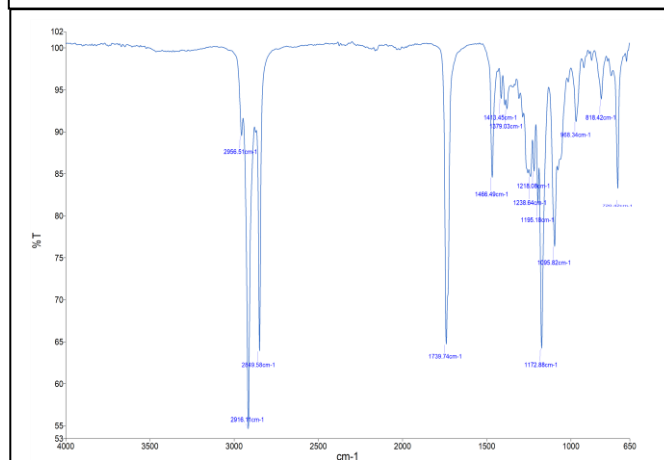
Figure S1. SEM micrographs of drug and some excipients. **Key:** QHCl = Quinine hydrochloride, S154 = Softisan® 154, C888 = Compritol® 888 ATO, CHD 5 = Compritol® HD 5 ATO. Selected formulations of QHCl-NS = Q7, Q9, and Q12, made with S154, CHD 5, and C888, respectively.



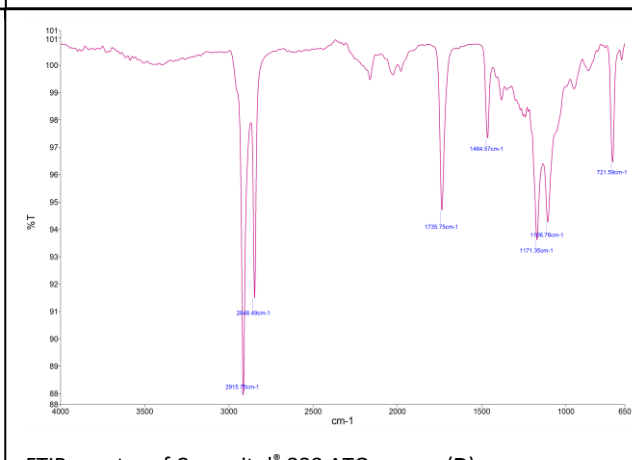
FTIR spectra of Phospholipon® 90H (A)



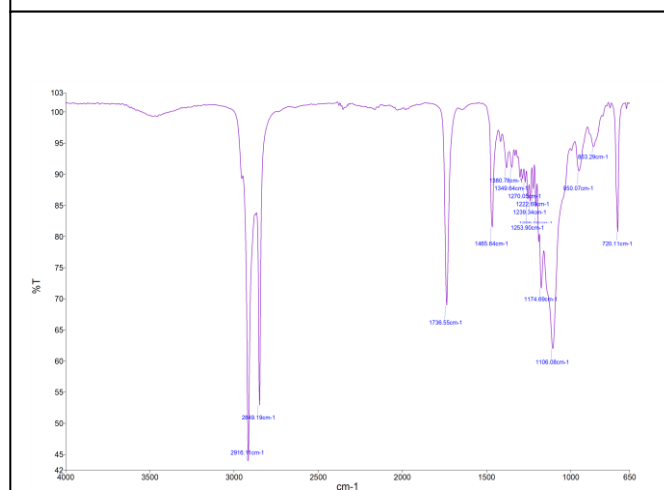
FTIR spectra of S154



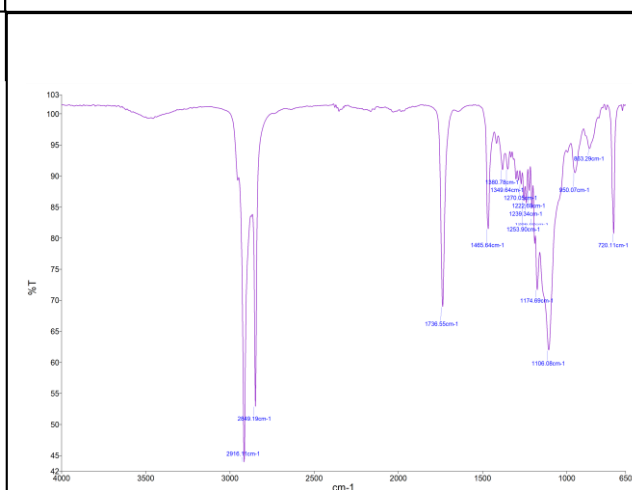
FTIR spectra of Lipid matrix made with Softisan® 154 and Phospholipon® 90H (C)



FTIR spectra of Compritol® 888 ATO (D)



FTIR spectra of Compritol® HD5 ATO (E)



FTIR spectra of Compritol® HD5 ATO (F)

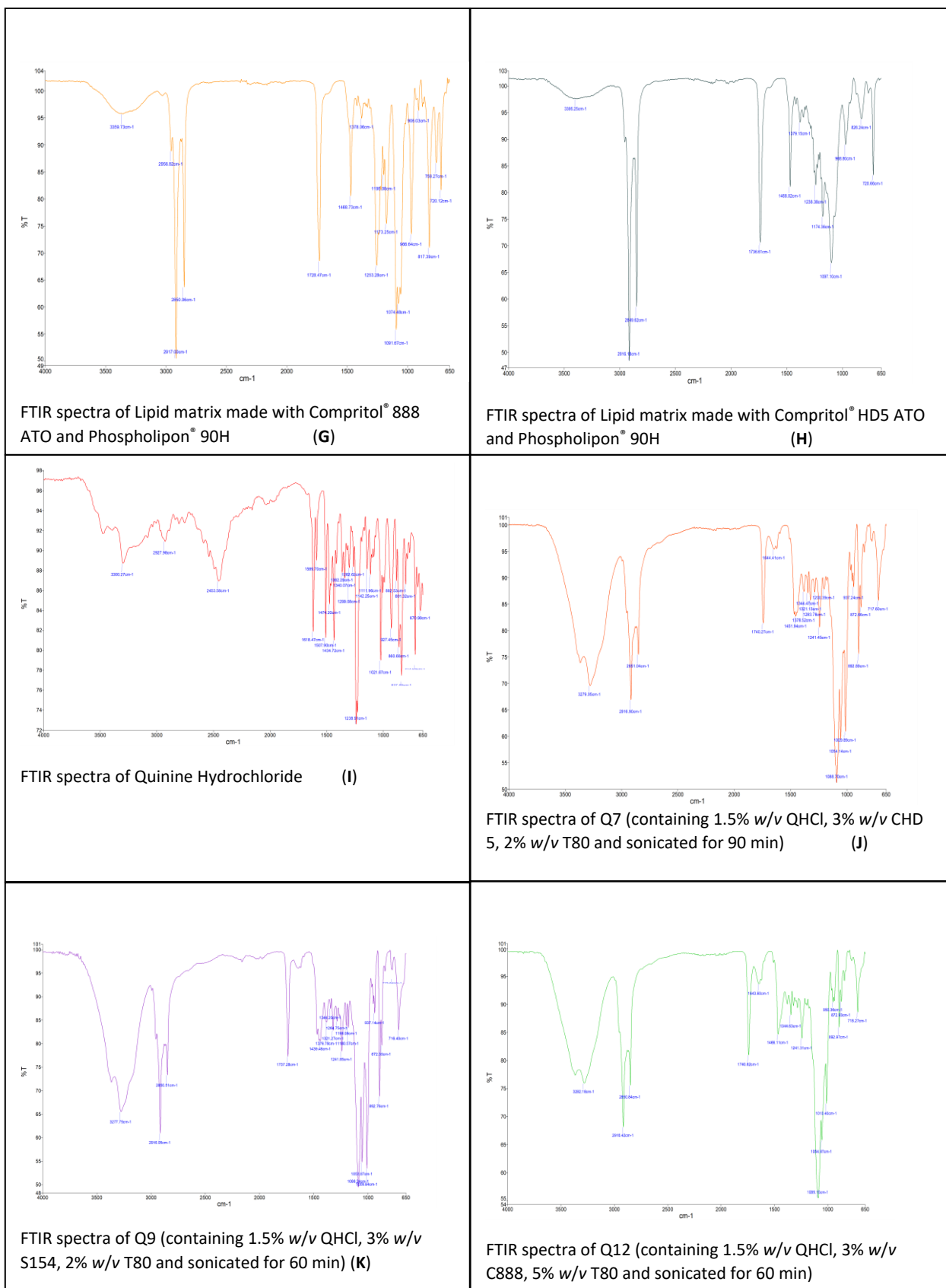


Figure S2. FTIR Spectra of Excipients and QHCL-NS formulation (A-L).

Table S2. DSC analysis results of plain drugs, and lipids and lipid matrices.

Materials	Melting Peak (°C)	Enthalpy (J/g)	Type of Peak
Quinine hydrochloride	115.67	75.066	Endothermic
S154	57.68	94.675	Endothermic
S154 + P90H	57.55	56.923	Endothermic
S154 in S154 + P90H + THP	55.67	44.533	
S154 in S154 + P90H + THP + MCT	47.99		
C888	72.53	116.25	Endothermic
C888 in C888 + P90H	67.03	95.464	Endothermic
C888 in C888 + P90H + THP	64.17	93.656	
C888 in C888 + P90H + THP + MCT	57.35		
CHD5	59.56	117.83	Endothermic
CHD5 in CHD5 + P90H	53.93	41.709	Endothermic
CHD5 in CHD5 + P90H + THP	44.87	11.189	
CHD5 in CHD5 + P90H + THP + MCT	24.46		

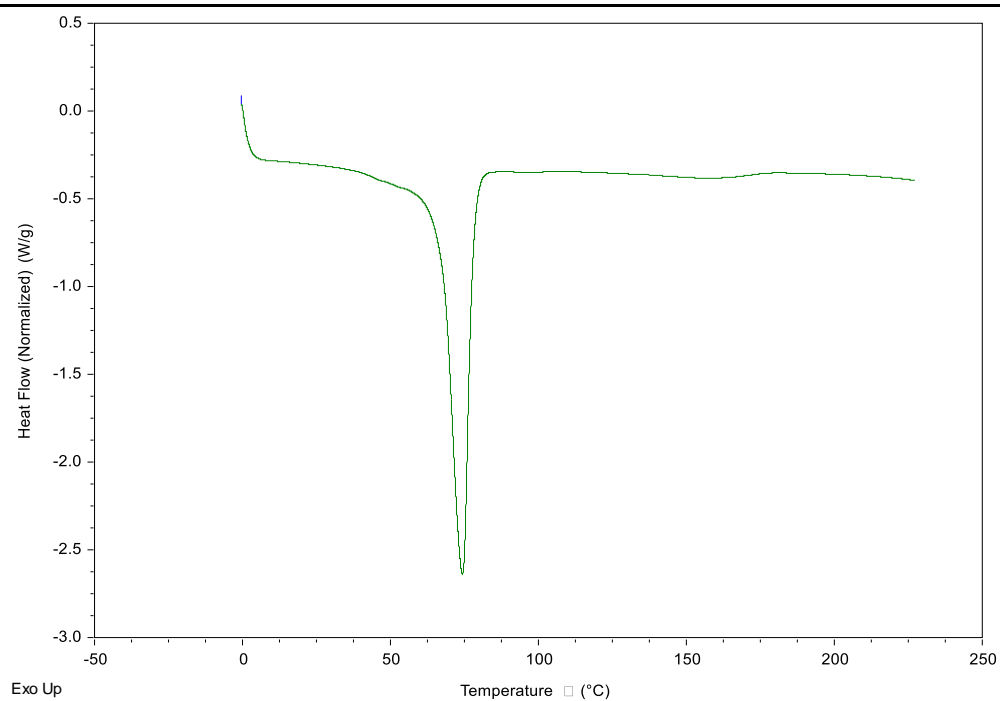


Figure S3. DSC thermogram of lipid matrix made with C888 and P90H.