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Supplementary Information

Pre-formulation of an additive combination of two antimicrobial agents, clofazimine and nisin A, to boost antimicrobial activity.

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Conditions screened for preparation of CFZ nanoparticles by liquid antisolvent precipitation.

Table S1. List of stabilizers and concentrations screened in the antisolvent phase for the antisolvent precipitation of CFZ particles.

Anti-solvent	Stabilizers	Z-Average Size (nm)	PDI	Zeta Potential (mV)
HCl/KCl pH 2.0 buffer	---	996	0.746	24.5 ± 1.21
	0.2% w/v Nisin A	568	0.637	
	0.2% w/v PVP	729	0.815	
	0.2% w/v Nisin A + 0.2% w/v PVP	164	0.361	
	0.4% w/v Nisin A + 0.2% w/v PVP	201	0.283	17.06 ± 1.29
	0.2% w/v Nisin A + 0.3% w/v PVP	210	0.299	
	0.2% w/v Nisin A + 0.2% w/v Pluronic F-127	1563	0.454	
	0.2% w/v Nisin A + 0.2% w/v PVP + 0.2% Pluronic F-127	3019	0.538	
	0.2% w/v Nisin A + 0.2% w/v PVA	500	0.823	
	0.1% w/v Nisin A + 0.1% w/v HPMC + 0.05% w/v lecithin	394	0.557	
	0.2% w/v Nisin A + 0.2% w/v PVP + 0.05% lecithin	290	0.873	
	0.5% lecithin (+ CFZ in THF) into 0.2% Nisin A + 0.2% PVP	1385	0.568	
	0.5% lecithin (+ CFZ in THF) into 0.2% Nisin A + 0.4% PVP	1108	0.468	
0.1% TFA (aq.)	---	228	0.372	54.7 ± 2.44
	0.4% w/v Nisin A	166	0.241	26.9 ± 1.04
	0.2% w/v PVP	210	0.296	
	0.2% w/v Nisin A + 0.2% PVP	178	0.198	
	0.2% w/v Nisin A + 0.3% PVP	178	0.264	
	0.2% w/v Nisin A + 0.4% PVP	187	0.277	
	0.3% w/v Nisin A + 0.2% PVP	171	0.226	
	0.4% w/v Nisin A + 0.2% PVP	173	0.154	28.87 ± 1.14

Particle size distributions

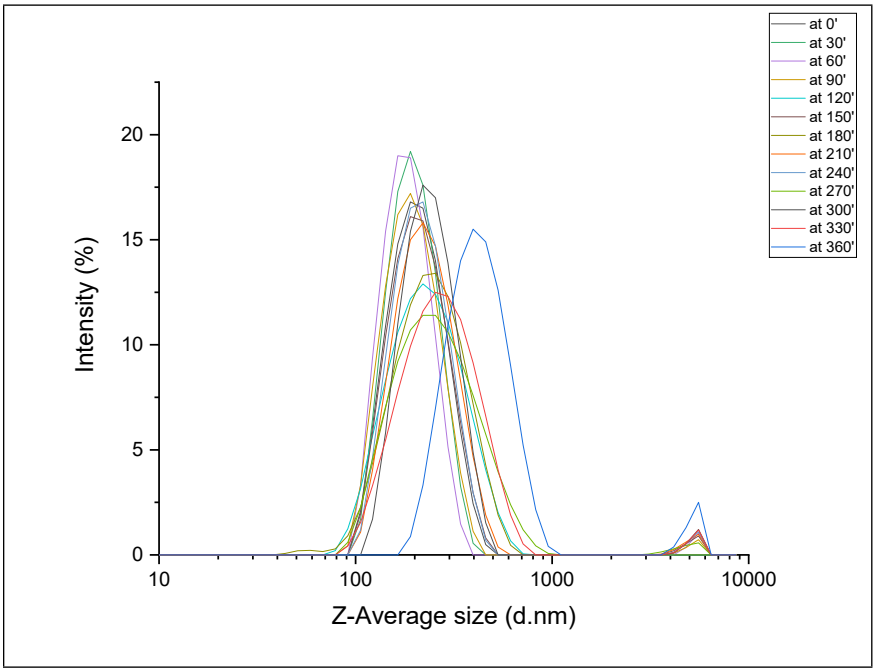

Figure S1. Particle size distribution over time of CFZ- salt nanosuspension in the presence of nisin A. Formulation: 0.3 mL 50 mg/mL CFZ in THF into 20 mL 0.4% v/w nisin A in 0.1% TFA (aq.)

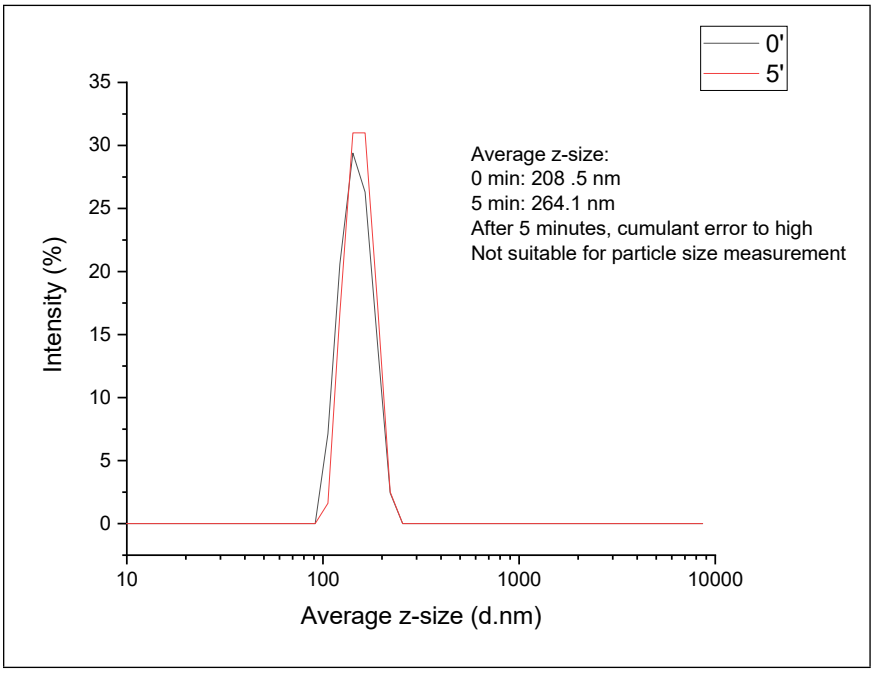

Figure S2. Particle size distribution and average size values of CFZ- salt nanosuspension in the absence of nisin A over time. Formulation: 0.3 mL 50 mg/mL CFZ in THF into 20 mL in 0.1% TFA (aq.)

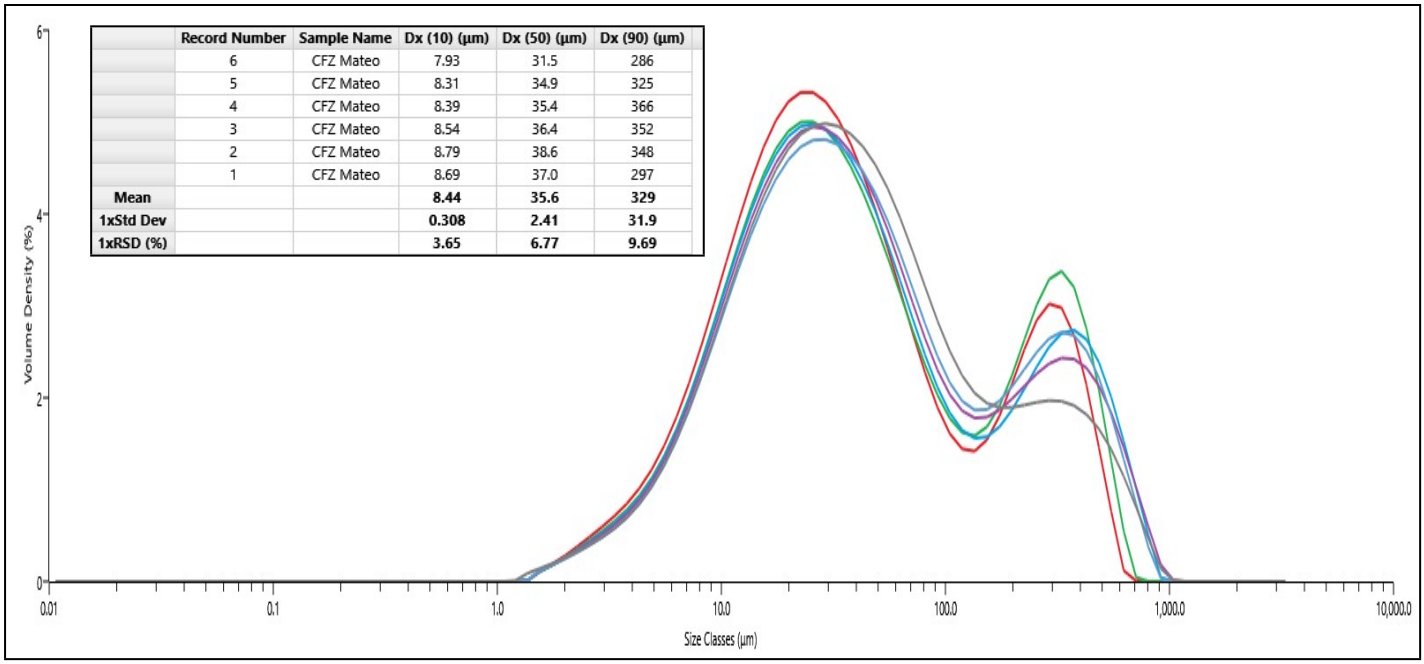

Figure S3. Particle size distribution and average size values of micron-sized CFZ TFA^- salt particles. Formulation: 1 mL of 250 mg/mL CFZ in THF into 100 mL 1 M TFA (aq.).

FTIR and SSNMR Analysis

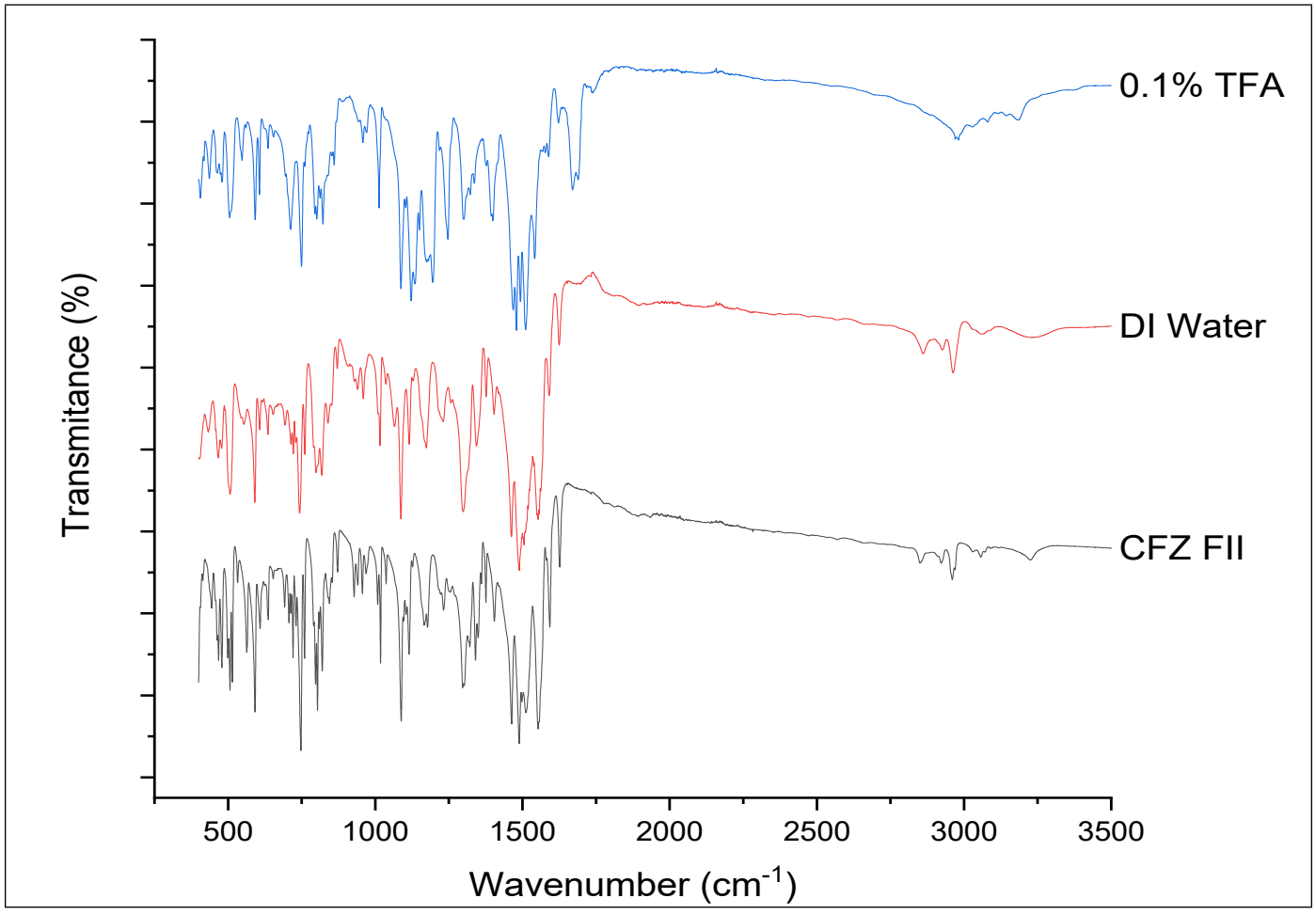

Figure S4. FTIR spectra of CFZ species precipitated in different antisolvents

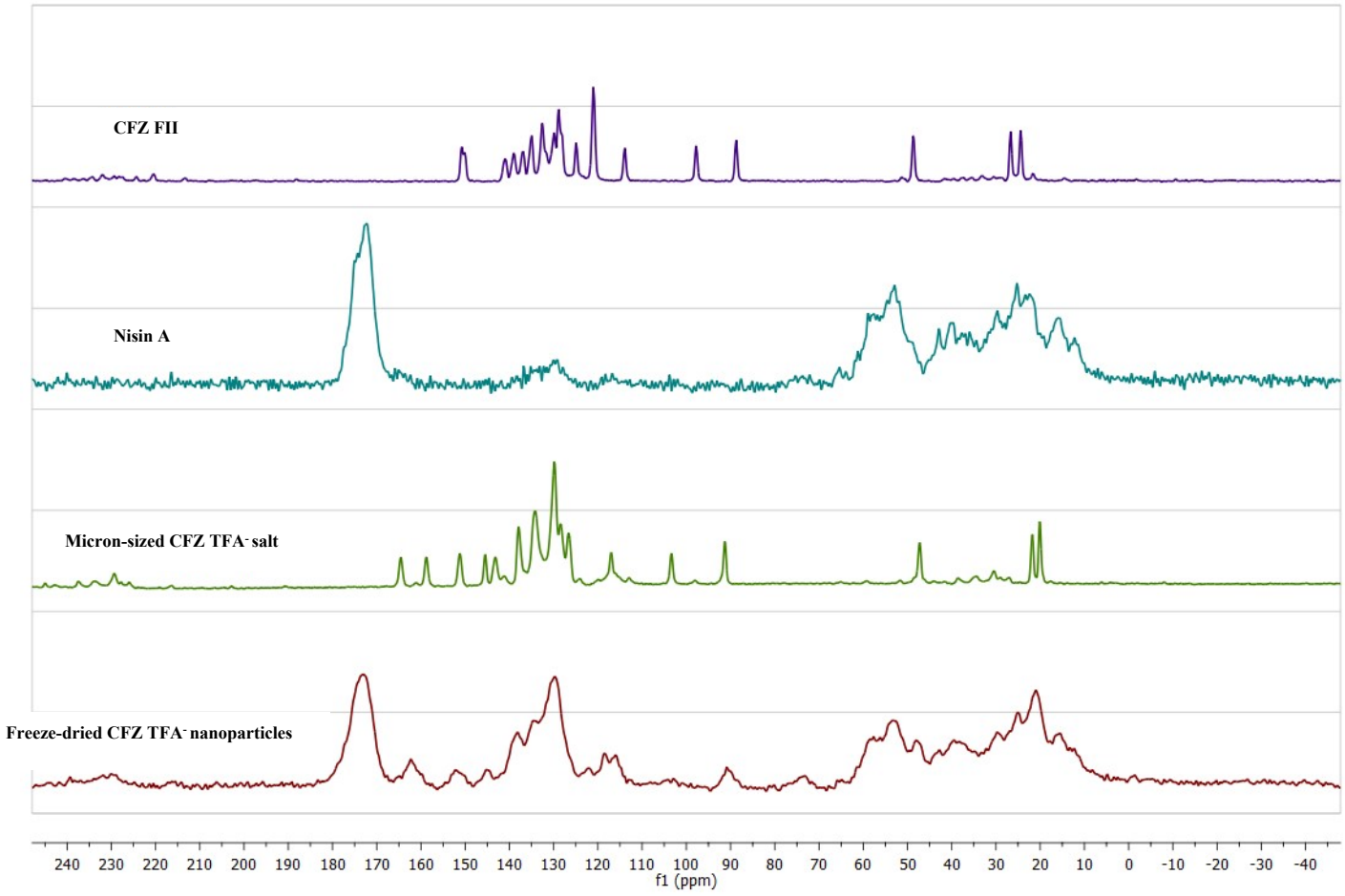

Figure S5. 13C CPMAS SSNMR of CFZ species and nisin A