Supporting information for :

Simultaneous control of polymorph and morphology via gelatin induction for concomitant system: case study of sulfathiazole

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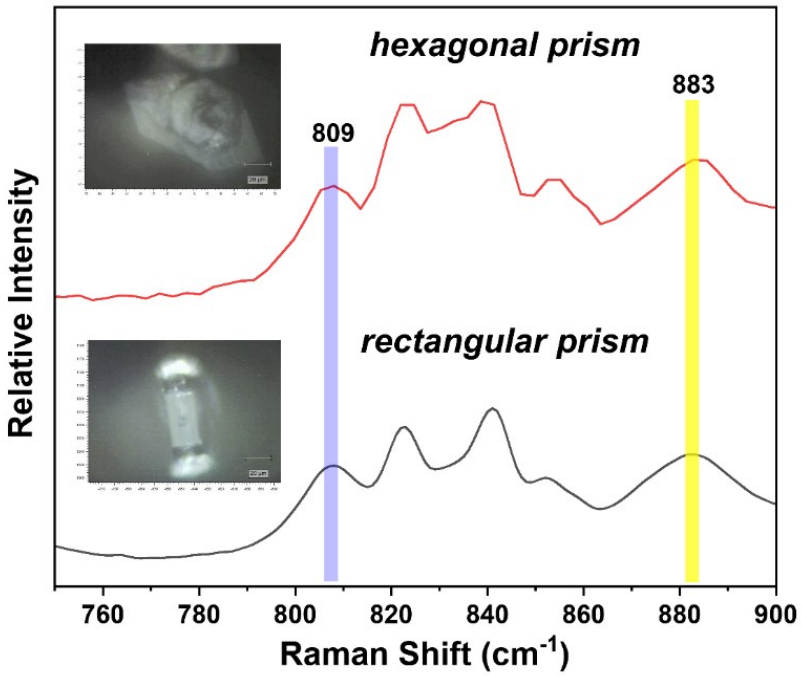

Fig. S1 Form III Raman spectra of different crystal habits.

Table S1 Preparation method of sulfathiazole pure polymorph and single crystal structure identifier from CCDC used to obtain standard simulated PXRD patterns.

Polymorph	Identifier	Solvent	Cooling rate	Temperature range
Form II	SUTHAZ			
Form III	SUTHAZ02	Water	0.1K/min	353K→293K
Form IV	SUTHAZ04	Water	Rapid	353K→277K

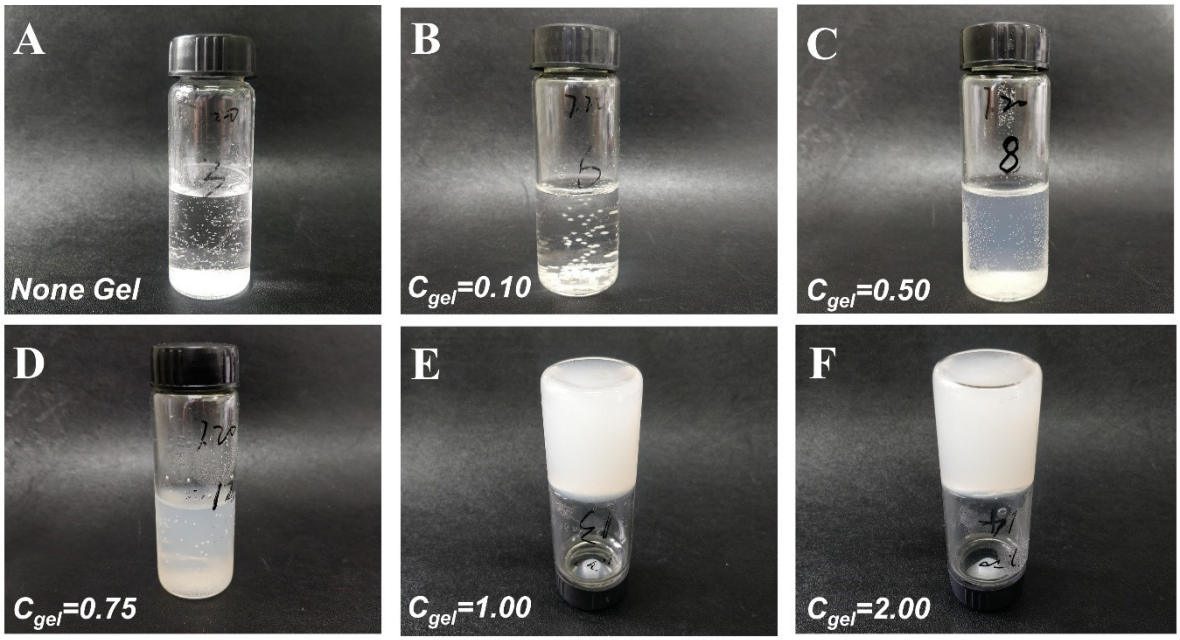

Fig. S2 GWSs with different gelatin concentrations. *T*=288.15k, *S*=9.0.

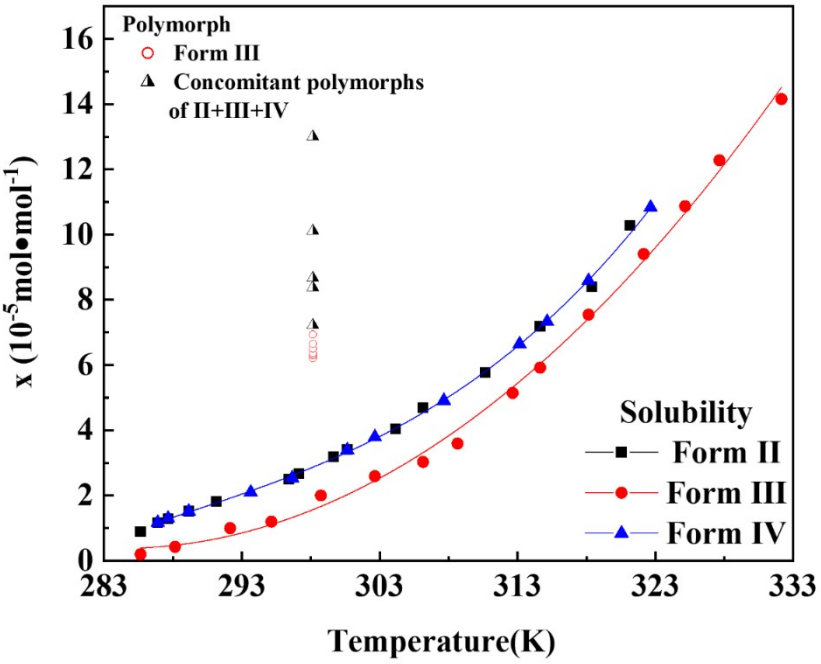

Fig. S3 Solubility of ST Form II, Form III and Form IV in aqueous solution from 285-333 K and polymorphs obtained by cooling crystallization with different supersaturation at 298K.

Table S2 Solubility of ST Form II in aqueous solution.

Temperature (K)	Solubility (10^{-5} mol·mol^{-1})
285.65	0.893
286.9	1.173
287.65	1.290
289.15	1.516
291.15	1.821
296.4	2.491
297.15	2.679
299.65	3.196
300.65	3.407
304.15	4.054
306.15	4.700
310.65	5.769
314.65	7.190
318.4	8.401
321.15	10.280

Table S3.Solubility of ST Form III in aqueous solution.

Temperature (K)	Solubility (10^{-5} mol·mol^{-1})
288.15	0.430
285.65	0.205
292.15	0.998
295.15	1.203
298.73	2.004
302.65	2.594
306.15	3.031
308.65	3.595
312.65	5.146
314.65	5.922
318.15	7.543
322.15	9.404
325.15	10.870
327.15	12.280
332.15	14.154

Table S4 Solubility of ST Form IV in aqueous solution.

Temperature (K)	Solubility (10^{-5} mol·mol^{-1})
286.9	1.175
287.65	1.300
289.15	1.516
293.65	2.100
296.65	2.538
300.65	3.396
302.65	3.795
307.65	4.911
313.15	6.644
315.15	7.331
318.15	8.588
322.65	10.832

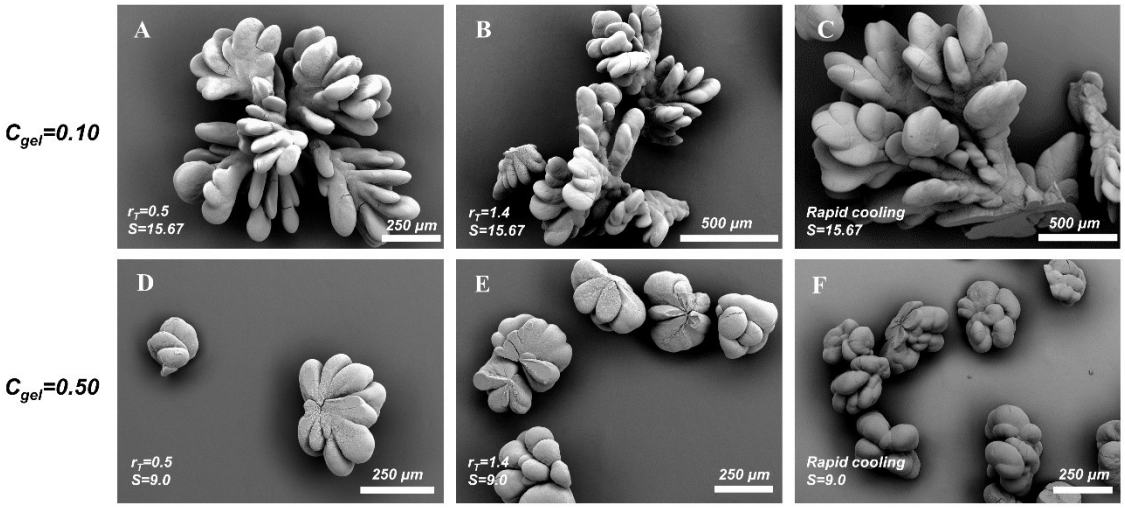

Fig. S4 The effect of different cooling rates on the ST morphology. Gelatin concentration and initial supersaturation are marked on the graph.

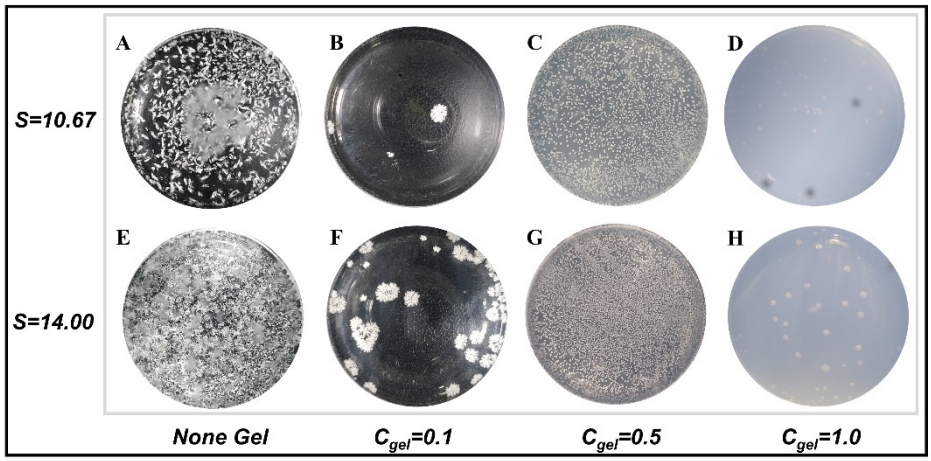

Fig. S5 Crystallization of GWSs with different gelatin concentrations.

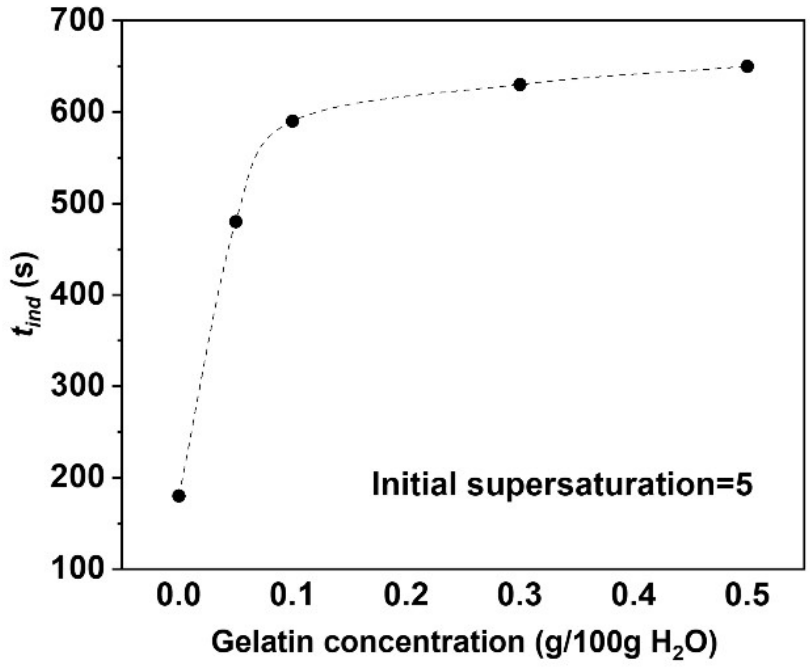

Fig. S6 Nucleation induction period of ST in different concentrations of GWSs.