

Article

# Effects of Various Inhibitors on the Nucleation of Calcium Oxalate in Synthetic Urine

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Received: 30 March 2020; Accepted: 22 April 2020; Published: date

## Supplementary Materials

**Table S1.** The new formula of synthetic urine for in vitro cellular study, adopted by Chutipongtanate and Thongboonkerd [24].

Composition	Concentration (mM)
Urea	200
Uric acid	1.00
Creatinine	4.00
Na <sub>3</sub> C <sub>6</sub> H <sub>5</sub> O <sub>7</sub>	5.00
NaCl	54.00
KCl	30.00
NH <sub>4</sub> Cl	15.00
CaCl <sub>2</sub>	3.00
MgSO <sub>4</sub>	2.00
NaHCO <sub>3</sub>	2.00
Na <sub>2</sub> C <sub>2</sub> O <sub>4</sub>	0.10
Na <sub>2</sub> SO <sub>4</sub>	9.00
NaH <sub>2</sub> PO <sub>4</sub>	3.60
Na <sub>2</sub> HPO <sub>4</sub>	0.40

**Table S2.** The synthetic urine adopted by Robertson and Scurr [21] and Grases et al. [22].

Composition	Concentration (mM)
Na <sub>2</sub> SO <sub>4</sub> · 10H <sub>2</sub> O	9.67
NH <sub>4</sub> Cl	43.37
KCl	81.30
CaCl <sub>2</sub>	5.00
NaH <sub>2</sub> PO <sub>4</sub> 2H <sub>2</sub> O	7.73
Na <sub>2</sub> HPO <sub>4</sub> 12H <sub>2</sub> O	7.82
NaCl	111.54
Na <sub>2</sub> C <sub>2</sub> O <sub>4</sub>	0.56

**Table S3.** The measured induction time data for the synthetic urine without inhibitors at 37 °C. Each condition was carried out three times to obtain the average induction time.

$S(-)$	$t_i (sec)$			
	Run 1	Run 2	Run 3	Average
10.09	992	971	901	955
11.77	421	503	451	458
13.65	225	201	228	218
18.01	137	122	122	127

**Table S4.** The measured induction time data for the synthetic urine in the presence of magnesium for  $S = 13.65$  at 37 °C. Each condition was carried out three times to obtain the average induction time.

$C_i (ppm)$	$t_i (sec)$			
	Run 1	Run 2	Run 3	Average
0	225	201	228	218
200	309	409	448	389
400	529	663	699	630
600	877	847	819	848
800	1399	1272	1311	1327
1000	2028	1990	2151	2056

**Table S5.** The measured induction time data for the synthetic urine in the presence of citrate for  $S = 13.65$  at 37 °C. Each condition was carried out three times to obtain the average induction time.

$C_i (ppm)$	$t_i (sec)$			
	Run 1	Run 2	Run 3	Average
0	225	201	228	218
200	464	461	499	475
400	806	676	697	726
600	1422	1687	1284	1464
800	2621	3087	2820	2843

**Table S6.** The measured induction time data for the synthetic urine in the presence of hydroxycitrate for  $S = 13.65$  at  $37\text{ }^{\circ}\text{C}$ . Each condition was carried out three times to obtain the average induction time.

$C_i$ (ppm)	$t_i$ (sec)			
	Run 1	Run 2	Run 3	Average
0	225	201	228	218
100	506	478	495	493
200	661	610	521	597
300	930	807	841	859
400	1053	1211	1008	1091
500	3594	3781	3740	3705
600	4386	4596	4670	4551

**Table S7.** The measured induction time data for the synthetic urine in the presence of chondroitin sulfate for  $S = 13.65$  at  $37\text{ }^{\circ}\text{C}$ . Each condition was carried out three times to obtain the average induction time.

$C_i$ (ppm)	$t_i$ (sec)			
	Run 1	Run 2	Run 3	Average
0	225	201	228	218
10	591	667	540	599
15	829	789	793	804
20	968	942	914	941
40	1156	1006	1172	1111
60	1149	980	1034	1054

**Table S8.** The measured induction time data for the synthetic urine in the presence of phytate for  $S = 13.65$  at  $37\text{ }^{\circ}\text{C}$ . Each condition was carried out three times to obtain the average induction time.

$C_i$ (ppm)	$t_i$ (sec)			
	Run 1	Run 2	Run 3	Average
0	225	201	228	218
0.5	1078	1040	888	1002
1.0	1722	1487	1683	1631
1.5	2492	2311	2193	2332