One-pot iron determination in fortified flours using thymol–1,10-phenanthroline deep eutectic solvent and smartphone-based digital image photometry

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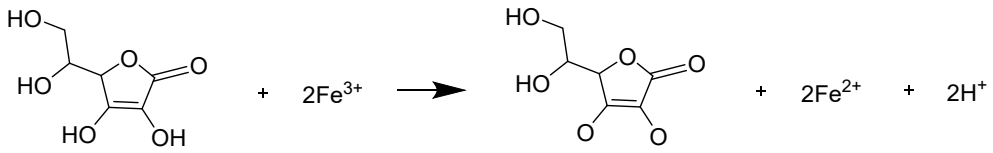
Eq S1



Eq. S2

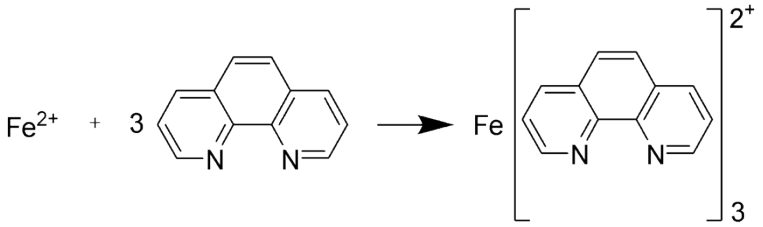


Table S1. AGREEprep evaluation of the proposed procedure

Criterion	Description	Score	Weight
1. Sample preparation placement	In situ	0.66	1
2. Hazardous materials	0.025 g	0.87	5
3. Sustainability, renewability, and reusability of materials	> 75% of reagents and materials are sustainable or renewable	0.75	2
4. Waste	0.35 g	0.80	4
5. Sample	Mass or volume of the sample: 0.05 g	1.00	2
6. Sample throughput	24 [samples/h]	0.75	3
7. Integration and automation	Sample prep. steps: 2 steps or fewer, manual systems	0.25	2
8. Energy consumption	0.1 [W]	1.00	4

Criterion	Description	Score	Weight
9. Post-sample preparation configuration for analysis	Simple: smartphone	1.00	2
10. Operator's safety	2 hazards	0.50	3
AGREEprep index		0.78	

Table S2. AGREEprep evaluation of the extraction/ICP-OES procedure

Criterion	Description	Score	Weight
1. Sample preparation placement	Ex situ	0.00	1
2. Hazardous materials	5 mL	0.10	5
3. Sustainability, renewability, and reusability of materials	Materials are not sustainable or renewable, but are used several times	0.50	2
4. Waste	5.25 mL	0.36	4
5. Sample	Mass or volume of the sample: 0.25 g	0.87	2
6. Sample throughput	24 [samples/h]	0.75	3
7. Integration and automation	Sample prep. steps: 2 steps or fewer, manual systems	0.25	2
8. Energy consumption	10 W	1.00	4
9. Post-sample preparation configuration for analysis	Advanced MS with high energy and/or noble gas consumption: ICP-OES	0.00	2
10. Operator's safety	2 hazards	0.50	3
AGREEprep index		0.46	

Table S3. AGREEprep evaluation of the digestion/ICP-OES procedure

Criterion	Description	Score	Weight
1. Sample preparation placement	Ex situ	0.00	1
2. Hazardous materials	14 mL	0.00	5
3. Sustainability, renewability, and reusability of materials	Materials are not sustainable or renewable, but are used several times	0.50	2
4. Waste	13 mL	0.22	4
5. Sample	Mass or volume of the sample: 0.25 g	0.87	2
6. Sample throughput	16 [samples/h]	0.65	3
7. Integration and automation	Sample prep. steps: 2 steps or fewer, manual systems	0.25	2
8. Energy consumption	1500 W	0.00	4
9. Post-sample preparation configuration for analysis	Advanced MS with high energy and/or noble gas consumption: ICP-OES.	0.00	2
10. Operator's safety	2 hazards	0.50	3
AGREEprep index		0.27	