

Electronic Supplementary Information

Table S1. Characteristic peaks of Tos1 compared with peaks of FEB and *p*-toluenesulfonic acid.

Absorption (cm ⁻¹)			Assignment (*)
FEB	Tos1	<i>p</i> -toluenesulfonic acid	
-	3000-2600	-	N-H, amine salt
2962	2960	-	O-H, carboxylic acid
2870	2870	-	C-H, alkanes
2660	2620	-	O-H, carboxylic acid
2540	2500	-	
2231	2231	-	C≡N, nitrile
1677	1710	-	C=O, carboxylic acid (dimer)
1603	1605	-	C, C stretching of aromatic ring
1510	1476	-	C=N, thiazole
1425	1425	-	S-C, thiazole
1374	1383	-	C-H, alkanes (methyl)
-	1343-1230	-	S=O stretching, sulfonate
-	1206	-	C=O stretching, carboxylic acid
1270	1252	-	
1116	1116	-	C-O, ether
1008	1008	-	
-	-	1230-1140	S=O stretching, sulfonic acid

(*) Sigma-Aldrich. Available online: <https://www.sigmaaldrich.com/RO/en/technical-documents/technicalarticle/analytical-chemistry/photometry-and-reflectometry/ir-spectrum-table> (accessed on 10.05.2023).

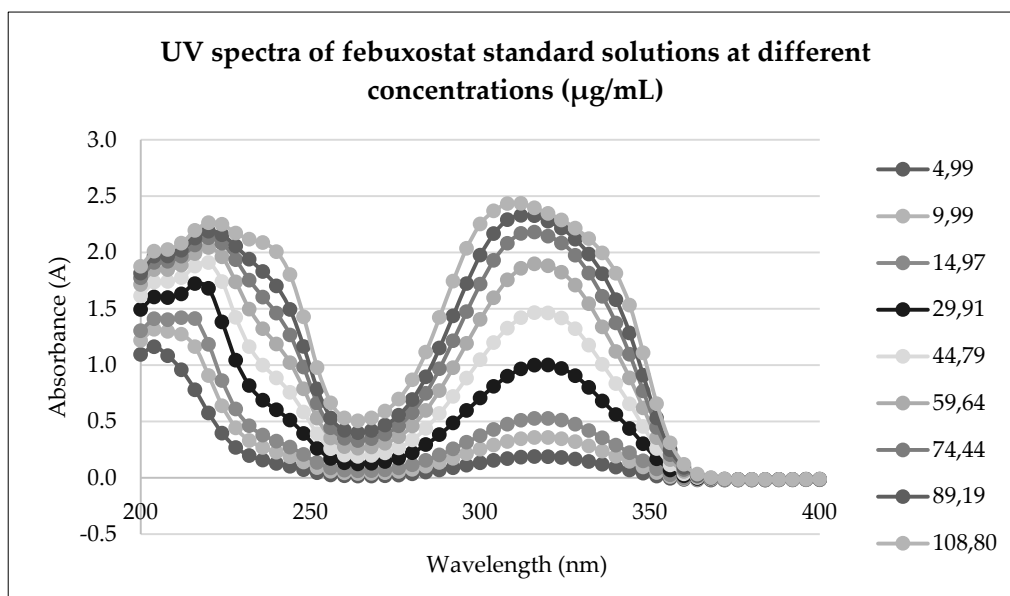


Figure S1. UV spectra of febuxostat standard solutions at different concentrations.

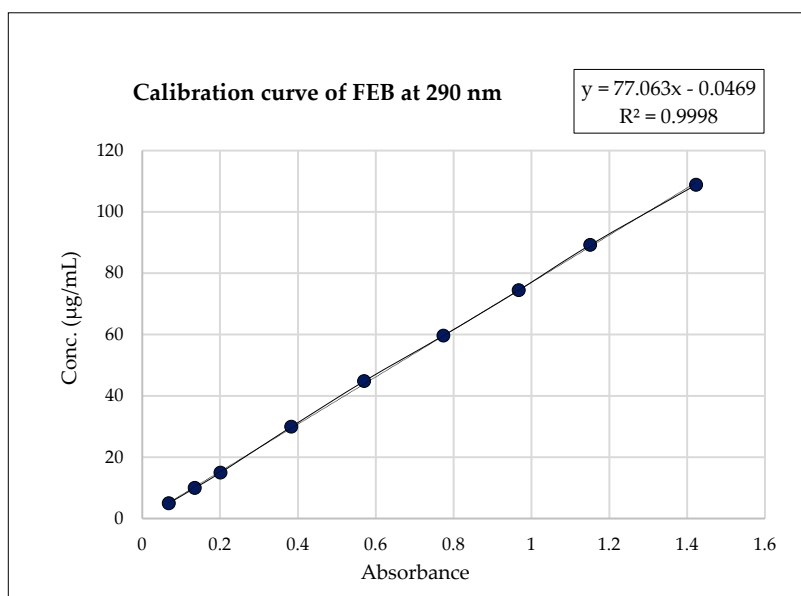


Figure S2. Calibration curve of febuxostat using the absorbance data at 290 nm.

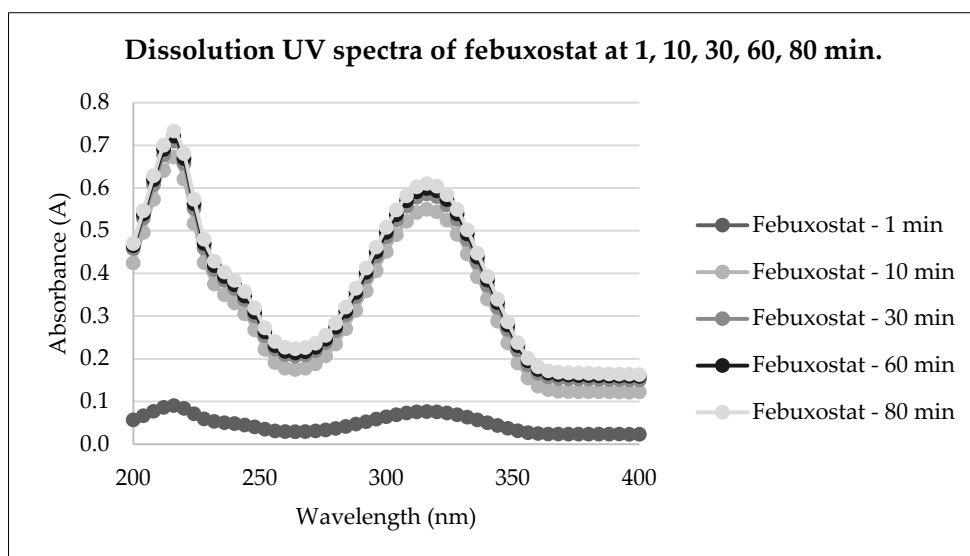


Figure S3. Dissolution UV spectra of febuxostat at 1, 10, 30, 60, 80 min.

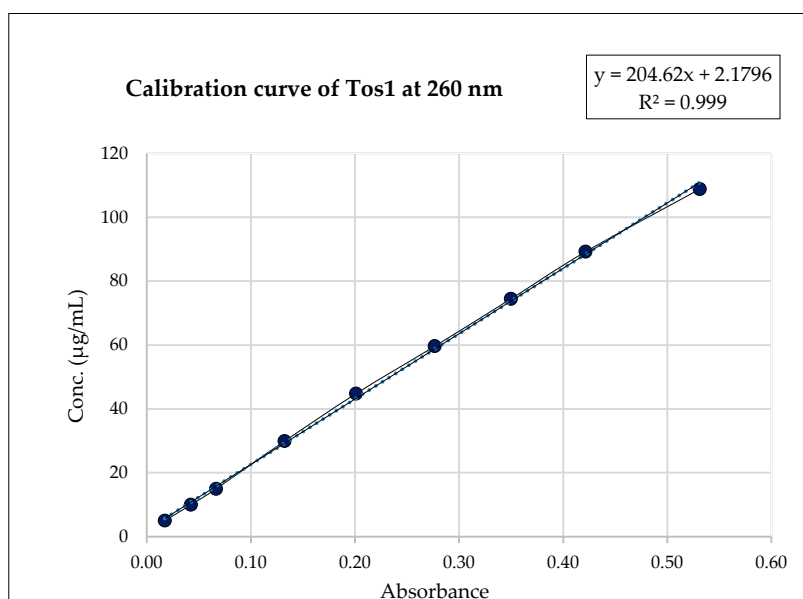


Figure S4. Calibration curve for Tos1 using the absorbance data at 260 nm.

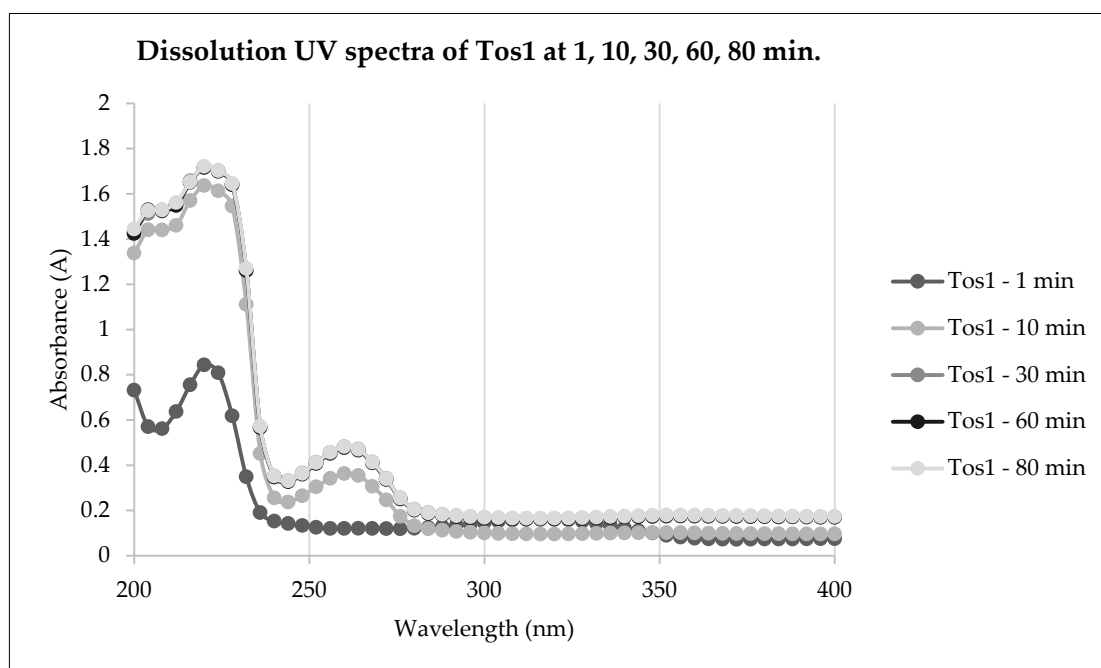


Figure S5. Dissolution UV spectra of Tos1 at 1, 10, 30, 60, 80 min.

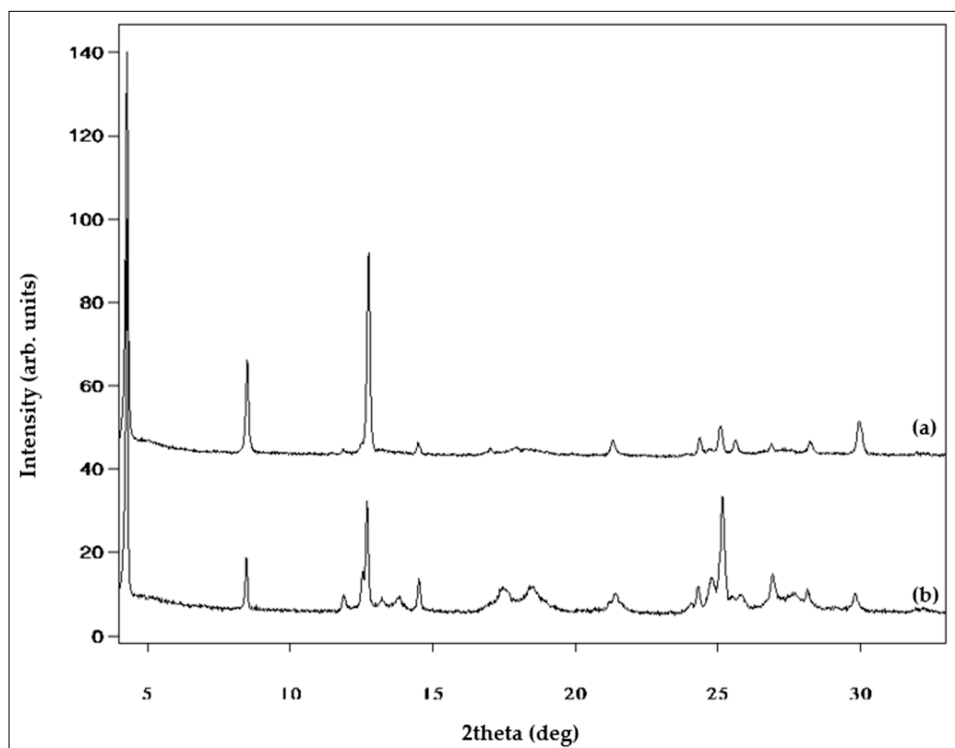


Figure S6. XRPD analysis of the residual solid (a) after and (b) before the dissolution experiment. A slight decrease in the intensity of the picks can be observed after the dissolution experiment.