Supplementary material

Development of green methods for the determination of elemental impurities in commercial pharmaceutical tablets

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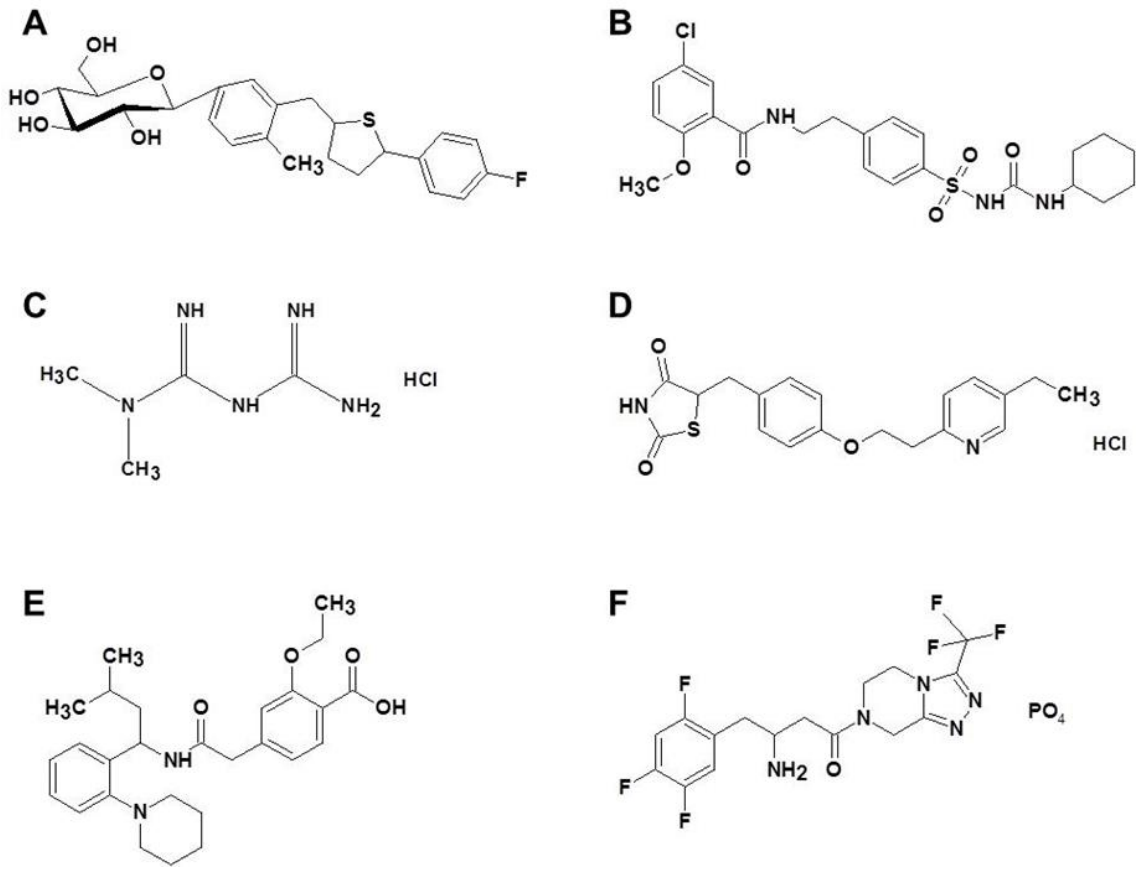

Figure S1. Molecular structure of the APIs contained in the oral drugs used in this study: A) canagliflozin, B) glibenclamide, C) metformin hydrochlorate, D) pioglitazone hydrochloride, E) repaglinide, F) sitagliptin phosphate.

Table S1. Analyte recovery after oral drug sample digestion by MAWD and MAWD-UV using optimized conditions (values in percentage, mean ± standard deviation, n = 3).

Sample	Analyte						
	As	**Cd**	**Co**	**Hg**	**Ni**	**Pb**	**V**
MAWD							
CANA[b]	108 ± 3	101 ± 2	103 ± 2	93.9 ± 2.2	103 ± 2	94.2 ± 3.8	92.8 ± 1.6
GLIB[a]	95.9 ± 2.1	99.4 ± 1.1	96.8 ± 1.9	101 ± 3	105 ± 1	101 ± 3	98.5 ± 1.8
MET[a]	108 ± 5	103 ± 2	101 ± 1	97.9 ± 3.4	100 ± 1	105 ± 5	104 ± 1
SITA[a]	93.7 ± 3.6	90.2 ± 1.2	97.9 ± 0.9	96.6 ± 1.3	99.9 ± 0.7	90.5 ± 0.7	102 ± 3
PIO[a]	98.8 ± 2.7	94.9 ± 2.5	100 ± 1	109 ± 1	102 ± 2	93.2 ± 0.3	95.9 ± 0.6
REPA[a]	97.5 ± 0.7	90.1 ± 1.9	95.5 ± 4.2	102 ± 2	98.9 ± 1.0	97.0 ± 2.9	95.4 ± 1.9
MAWD-UV							
CANA	103 ± 1	101 ± 2	100 ± 2	96.7 ± 2.8	97.8 ± 3.2	98.3 ± 2.4	100 ± 3
GLIB	110 ± 1	97.6 ± 1.0	95.8 ± 1.2	107 ± 3	106 ± 4	94.7 ± 2.0	105 ± 1
MET	103 ± 3	106 ± 3	105 ± 3	95.5 ± 1.6	105 ± 3	98.3 ± 3	96.3 ± 3.3
PIO	106 ± 4	100 ± 2	97.8 ± 1.8	97.6 ± 2.9	99.4 ± 1.2	104 ± 3	105 ± 2
REPA	106 ± 3	96.9 ± 2.0	94.0 ± 3.8	92.5 ± 2.6	92.5 ± 3.1	98.2 ± 1.7	97.8 ± 3.1
SITA	107 ± 1	96.6 ± 2.8	104 ± 2	98.0 ± 1.8	101 ± 3	106 ± 2	99.9 ± 1.3

a: MAWD: 500 mg of sample, 2 mol L^{-1} HNO_3, 1 mL of 50% H_2O_2 and irradiation program 1.
b: MAWD: 500 mg of sample, 3 mol L^{-1} HNO_3, 1 mL of 50% H_2O_2 and irradiation program 2.