

Article

Rapid Detection of Six Glucocorticoids Added Illegally to Dietary Supplements by Combining TLC with Spot-Concentrated Raman Scattering

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Supplementary Data

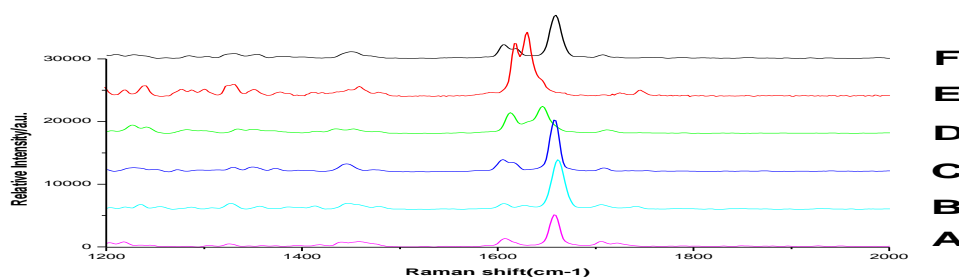


Figure S1 Raman spectra of reference substance powders (A, B, C, D, E, F: prednisone, prednisone acetate, prednisolone, hydrocortisone, hydrocortisone acetate, and dexamethasone)

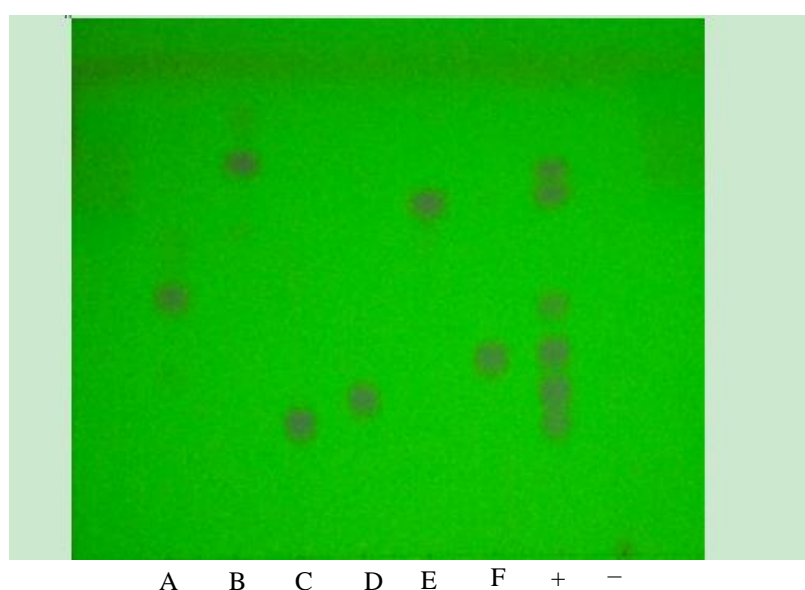


Figure S2. TLC of the simulated positive sample (A, B, C, D, E, F: Reference substance of prednisone, prednisone acetate, prednisolone, hydrocortisone, hydrocortisone acetate, dexamethasone; +: Simulated positive sample; -: Simulated negative sample)

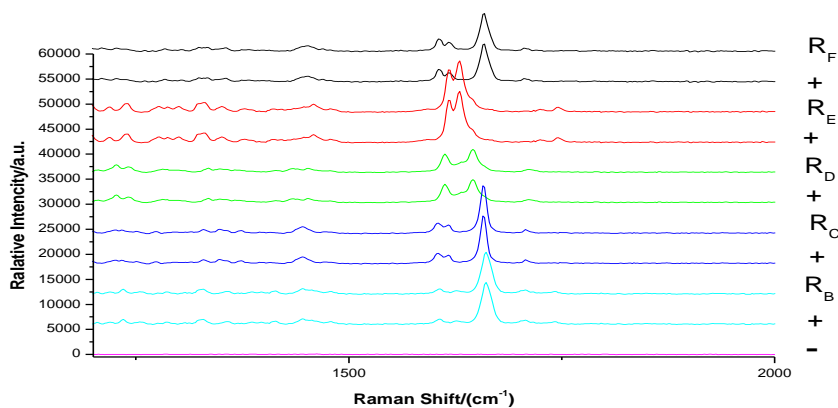


Figure S3. TLC on-site spot concentrated Raman spectra of the simulated positive sample (R_B, R_C, R_D, R_E, R_F: Reference substance of prednisone acetate, prednisolone, hydrocortisone, hydrocortisone acetate, dexamethasone; +: Simulated positive sample; -: negative sample;)

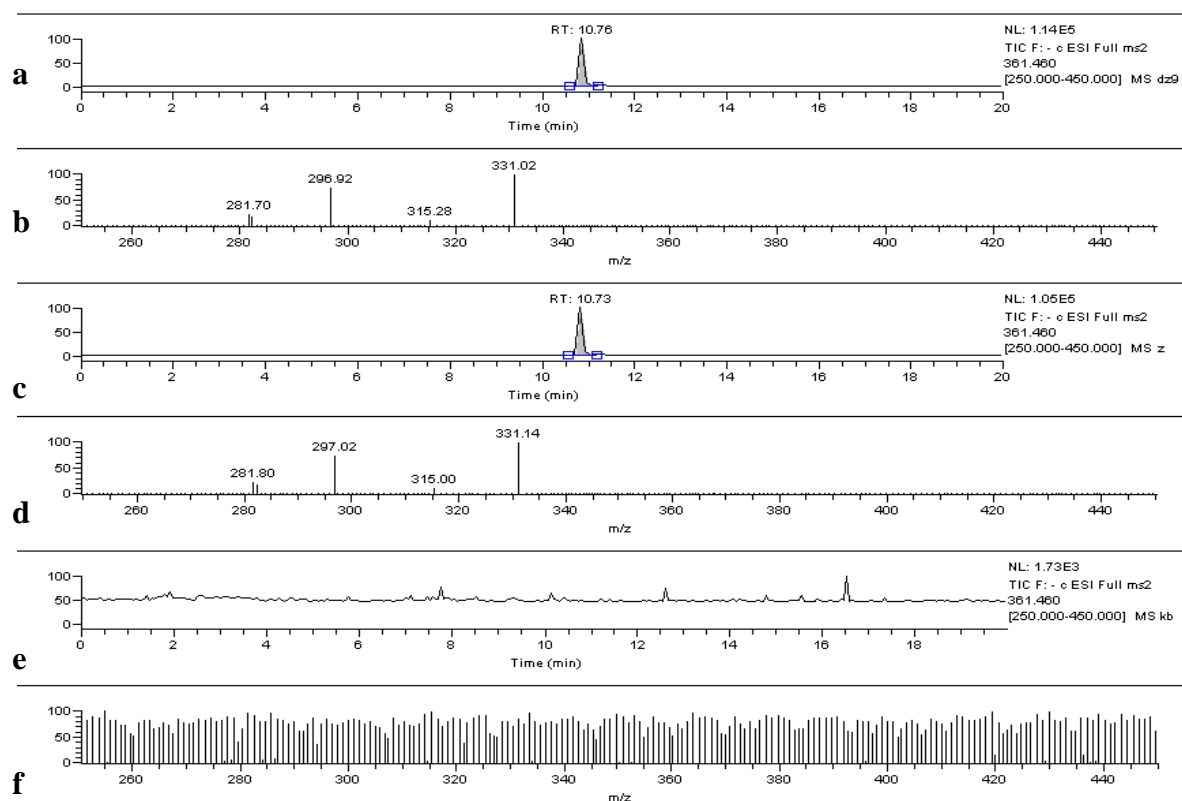


Figure S4. HPLC-MS results of sample 5 (a: ion chromatogram of hydrocortisone reference, b: mess spectrogram of hydrocortisone reference, c: ion chromatogram of sample 5, b: mess spectrogram of sample 5, a: ion chromatogram of blank control, b: mess spectrogram of blank control)

Table S1. The main drug matrix of 5 kinds of dietary supplement

Dietary supplements	Lot.	Dose(g)	Main drug matrix
1	5205003	5	<i>Clausinella tiara</i> , <i>Jujube</i> , <i>Zingiber officinale</i> <i>Roscoe</i> , <i>Rock candy/crystal sugar</i>
2	20151020	2	<i>Dioscorea opposita</i> Thunb. , <i>Calcium Gluconate</i> , <i>Calcium Ascorbate</i> , <i>Biological calcium</i> , <i>Taurine</i> , <i>Papain</i> , <i>Stevia sugar</i>
3	20160301D	1.05	<i>Panax quinquefolius</i> L. , <i>Rhodiola rosea</i> L. , <i>Gynostemma pentaphyllum</i> Makino , <i>Lycium chinense</i> Mill. , <i>Asini Corii Colla</i> , <i>Cornu Cervi Pantotrichum</i>
4	617010201	2	<i>Spirulina</i>
5	20170505	0.88	<i>Amino acid</i> , <i>Taurine</i> , <i>Cephalin</i> , <i>Deep-sea animal extracting solution</i> , <i>Dimocarpus longgana</i> Lour. , <i>Common Yam Rhizome</i> , <i>Lycium chinense</i> Mill. , <i>Jujube</i>

Table S2. The preparation of simulated positive sample solutions

Adulterants	Minimum necessary amount of adulterant for a drug use	Concentration	Volume	Deposition amount	<i>LOD</i>
Prednisone	5 mg	2 mg/1 mL	6 µL	12 µg	4 µg
Prednisone acetate	5 mg	2 mg /1 mL	6 µL	12 µg	4 µg
Prednisolone	5 mg	2 mg /1 mL	6 µL	12 µg	4 µg
Hydrocortisone	10 mg	2 mg /1 mL	6 µL	12 µg	6µg
Hydrocortisone acetate	20 mg	2 mg /1 mL	6 µL	12 µg	6 µg
Dexamethasone	0.75 mg	0.75 mg /1mL	6 µL	4.5µg	4 µg