

Supplementary Material

Tea and Chicory Extract Characterization, Classification and Authentication by non-Targeted HPLC-UV-FLD Fingerprinting and Chemometrics

Josep Pons ¹, Àlex Bedmar ¹, Nerea Núñez ¹, Javier Saurina ^{1,2} and Oscar Núñez ^{1,2,*}

¹ Department of Chemical Engineering and Analytical Chemistry, University of Barcelona. Martí i Franquès 1-11, E08028, Barcelona, Spain. (J.P., josepferre8@gmail.com, À.B., alexbedmar1999@gmail.com, N.N., nereant7@gmail.com, J.S., xavi.saurina@ub.edu; O.N., oscar.nunez@ub.edu)

² Research Institute in Food Nutrition and Food Safety, University of Barcelona, Recinte Torribera, Av. Prat de la Riba 171, Edifici de Recerca (Gaudí), Santa Coloma de Gramenet, E08921 Barcelona, Spain.

* Correspondence: O.N.: oscar.nunez@ub.edu

Table S1. Information about the analyzed samples.

| Sample type | Commercial name | Production region | Number of samples (different lots) |
|-------------|--|-------------------|---------------------------------------|
| Black tea | Ceylon black tea | Sri Lanka | 3 |
| | Irish blend | India | 3 |
| | Strong English breakfast | Sri Lanka | 3 |
| | Yunnan finest tippy, premium | China | 2 |
| | India Assam maud | India | 3 |
| | Kenya Marnyin | Kenya | 3 |
| | Darjeeling ringtong (second harvest) | India | 3 |
| | Darjeeling first flush (first harvest) | India | 2 |
| | Formosa tarry lapsang souchong | Taiwan | 3 |
| | Ceylon quality blend | Sri Lanka | 2 |
| | Ceylon Nuwara eliya | Sri Lanka | 3 |
| | Korakundah mountain tea | India | 3 |
| | Darjelling margaret's hope (first harvest, premium) | India | 2 |
| Green tea | Organic gunpowder | China | 2 |
| | Pi lo chun (premium) | Taiwan | 2 |
| | Sencha (Zhejiang) | China | 2 |
| | Lung ching | China | 2 |
| | Sencha (premium) | China | 2 |
| | Japan Bancha premium | Japan | 2 |
| | Japan gyokuro organic | Japan | 2 |
| | Mao Feng Jiangsu | China | 2 |
| | Assam Jamguri green | India | 2 |
| | Lung ching second grade premium | China | 2 |
| Oolong tea | Dong ding oolong | Taiwan | 3 |

| | | | |
|-----------|--|---------|---|
| | Tie kuan yin | China | 3 |
| | Milky oolong | China | 2 |
| | Special yellow sun | China | 2 |
| Red tea | Pu erh Royal (special fermentation) | China | 3 |
| | Pu erh Original | China | 3 |
| | Pu erh Imperial (manual harvesting) | China | 3 |
| | Pu erh Royal Palace | China | 3 |
| White tea | Pai Mu tan | China | 5 |
| | Silver needles (premium, artisanal production) | China | 5 |
| Chicory | Chicory roots, Valley of Tea | Belgium | 5 |
| | Ecological chicory, Herbes del Molí | Spain | 5 |
| | Chicory roots, Health Embassy | England | 5 |
| | Chicory roots, Especies Pedroza | Spain | 5 |

Table S2. PLS model and prediction classification rates in the tea extract vs. chicory adulteration studies.

| Adulteration study | HPLC-UV fingerprint | | HPLC-FLD fingerprint | |
|------------------------|---------------------|----------------|----------------------|----------------|
| | PLS model | PLS prediction | PLS model | PLS prediction |
| Black tea vs. chicory | 100% | 100% | 100% | 100% |
| White tea vs. chicory | 100% | 77.78% | 100% | 100% |
| Green tea vs. chicory | 100% | 100% | 96.43% | 100% |
| Oolong tea vs. chicory | 100% | 88.89% | 100% | 100% |
| Red tea vs. chicory | 100% | 100% | 94.45% | 100% |