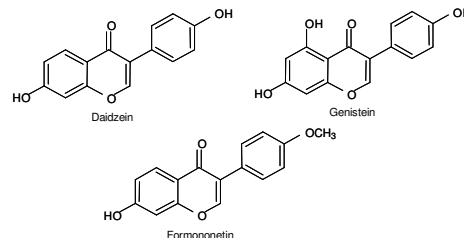


INTRODUCTION

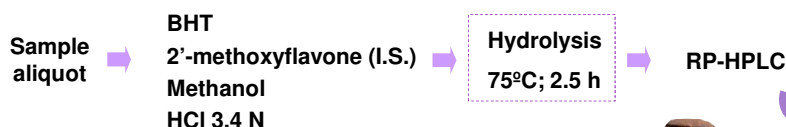
Isoflavones are widely known as bioactive compounds with estrogenic activity and antioxidant properties. They are also able to inhibit protein tyrosine kinases and modulate many other enzymes ¹. Several epidemiological studies associate isoflavones intake with beneficial effects on human health, especially concerning the incidence of certain types of cancer, cardiovascular diseases and osteoporosis ².



Soya and derivatives are important sources of isoflavones (up to 1000 µg/g). Although in lower amounts, these compounds are also found in other products, as nuts and oilseeds (up to 3 µg/g), alfalfa sprouts (4 µg/g) and other legumes (up to 0.4 µg/g) ³.

The aim of this work was to evaluate isoflavones levels in roasted coffee, embracing the two coffee species with higher economical importance, *Coffea arabica* and *Coffea canephora* var. *robusta*, and commercial samples (usually blends of both coffee species).

ANALYTICAL METHODOLOGY



- HPLC integrated system (Jasco, Japan) with an AS-950 automated injector (20 µL loop), two Jasco PU-2080 Plus pumps and a MD-2010 Plus multiwavelength diode-array detector.
- Column: Mediterranea Sea18 (5 µm, 15 cm x 4.6 mm i.d.) from Teknokroma (Barcelona, Spain)
- Gradient solvent system: formic acid 0.1% (eluent A) and acetonitrile (eluent B)
- Operating temperature : 40 °C
- Flow rate: 1 mL/min.
- Analytes monitoring: at 254 nm

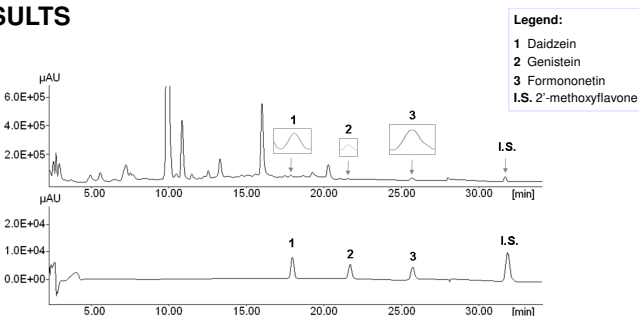
SAMPLES

Ground roasted coffee:

- 100% *arabica* ($n = 2$, medium roast): **A1** (Brazil), **A2** (Honduras)
- 100% *robusta* ($n = 2$, medium roast): **R1** (Uganda), **R2** (Ivory Coast)
- Commercial blends of arabica and robusta ($n = 8$): **B1-B8**

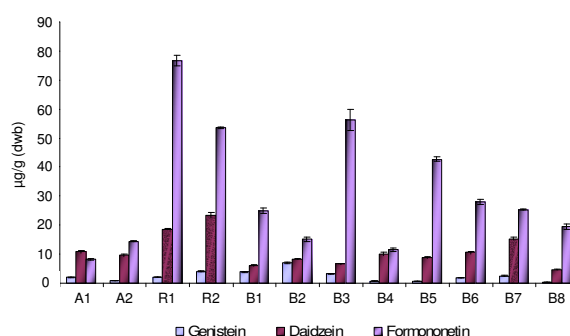


RESULTS



Chromatograms (254 nm) of a sample and a standard mixture

Isoflavones content in roasted coffee



CONCLUSION

All the analysed samples contained daidzein, genistein and formononetin and the total isoflavones content varied from 21 µg/g to 97 µg/g, with medium roasted robustas attaining the highest levels and arabicas the lowest ones.

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