

Evaluation of bioactive compounds and antioxidant activity in functional Arabica coffee extract

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Brazil is the world's largest producer of Arabica coffee beans and is the second largest market of coffee. Brazilian coffee crops have exceptional flavors and aromas, but there is a gap in country in the development of specialties based on this beverage. Recent discoveries about the functional benefits of coffee are some of the factors that strengthen the need to search for processing alternatives and pave the way for new opportunities in exploring the potential of the beverage. The coffee consumption, independent of caffeine intake, is associated lower risk of diabetes, Alzheimer diseases. In vitro and animal studies attributing these beneficial properties to antioxidant and chlorogenic acid compounds. This work reports the bioactive compounds investigation and the antioxidant activity of the fluid coffee extract produced under mild conditions and fortified with green coffee extract. The extraction and concentration methods to produced fluid coffee extract from Arabica beans are conducted under ambient temperature. Physicochemical characterization were performed and chlorogenic acids and caffeine contents were determined by HPLC, total phenolic content by Folin-Ciocalteu assay and the antioxidant activity by DPPH assay. Physicochemical characteristics and bioactives contents were determined comparing obtained results for raw material, crude extract, concentrated extract and fortified extract. The extraction and concentration process at room temperature produce an extract with low acidity and less caffeine content. The fortified extract is three times richer in phenolic compounds and chlorogenic acid, resulting in an antioxidant activity three times higher than the concentrated extract. These results suggest that the fortified fluid extract of coffee have functional characteristics and thus may be an alternative for those who suffer from gastrointestinal symptoms.

Biography

Elaine C. Cabral has experience in the field of Natural Product Chemistry and Mass Spectrometry, working mainly in the identification of bioactive compounds, standardization of vegetal raw material by ESI-MS/MS. He has worked intensively in the development of methodologies for HPLC-MS/MS and MS-imaging of biomolecules. Currently she is responsible for the R&D of Clarus Organic Division in the development of new plant-based food products.

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