Recovery of Highly Bioactive Compounds from Red Ginseng Marc using Subcritical Water and Their Antioxidant Effects

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With the growing concern of environmental pollution by food by-products and depletion of natural sources, their valorization is one of the current imperatives of society. Among of several developed methods, subcritical water extraction (SWE) is a sustainable and green alternative to recover added value products from diverse by-products. However, the use of SWE technique to recover valuable compounds from red ginseng marc (RGM) is limited research until now. Therefore, the main objectives of this study were to determine the efficiency of the SW in the extraction of bioactive compounds from RGM powder and to gain insight into the mechanism of reactive extraction. We explored a range of extraction parameters including temperature, pressure, time, and particle sizes to maximize the yield and bioactive activity of the extract. The antioxidant capacities of the extracts were assessed using different *in vitro* methods to explore its potential applications in cosmeceutical, pharmaceutical and medicine fields.