Pressurized Hot Water Extraction of Phytochemicals from Chamaecyparis obtusa

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The objective of this study is to optimize process parameters for recovery of functional compounds from Chamaecyparis obtusa using Pressurized hot water extraction (PHWE). The phytochemicals extracted from different parts of C. obtusa has various biological activities, including cytotoxic, allopathic, and antioxidant activities. Conventionally, these phytochemicals are extracted using organic solvents or hydro-distillation. However, these methods have several drawbacks including usage of a large volume of organic solvents, and long extraction time. PHWE employed water as solvent at a sufficiently high temperature and pressure. At high temperature and pressure, water remains liquid and its dielectric constant and polarity are changed. Therefore, the PHWE as green technology can be used for the recovery of C. obtusa functional compounds for safe and rapid methodology. Finally, The chemical composition, volatile compound composition, antioxidant activity, total phenolic compounds and total flavonoid compounds of the extracts will be investigated in order to recommend its application for cosmetic and related industries.