

Development of Microwave Assisted Extraction Process for the Production of Bioactive Compounds from *Orostachys japonicus*

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This study was performed to establish microwave-assisted extraction (MAE) conditions for the production of bioactive materials with antioxidant, skin-whitening, and anti-wrinkle activities from *Orostachys japonicus*. Surface response analysis was used to optimize the extraction of bioactive materials from *O. japonicus*. The conditions for MAE used for the optimization were microwave power, time, and ethanol concentration. Among the conditions applied to the optimization, it was found that ethanol concentration had the most significant effect on the extraction of bioactive materials. The maximum electron donating ability of 22.2%, tyrosinase activity inhibition of 62.3%, and collagenase activity inhibition of 85.2% were predicted under the following conditions, respectively: 535.2 w of microwave power, 61.4 sec of extraction time, and 49.8 v/v% of ethanol concentrations. This optimum condition was matched well with the actual data from validation experiment (EDA 24.8%, TAI 61.0%, and CAI 83.5%). Overall, *O. japonicus* is an excellent natural cosmetic materials containing antioxidant, skin-whitening, and anti-wrinkle properties, which can be developed as cosmetics and food additives.