Total Phenolic and Flavonoid Content of Cat's Whiskers Leaves Using Supercritical Carbon Dioxide Extraction

ABSTRACT

Cat's whiskers, also known as *Orthosiphon stamineus* leaves, is one of the main herbs used to treat numerous health problems in Malaysia. The herb includes a large number of bioactive compounds from the phenolics and flavonoids groups, which contribute to its pharmacological actions. The supercritical carbon dioxide (SCCO2) extraction technique was proposed to extract the phenolics and flavonoids compounds from Cat's whiskers leaves. The extraction parameters of pressure ranging from 10 to 30 MPa and temperature ranging from 40 to 80 °C were studied. The carbon dioxide flow rate, sample mean particle size, and extraction time were all held constant at 10 g/min, 300 μm, and 2 hours, respectively. At 60°C and 30 MPa, the greatest concentration of total phenolic content (TPC) was obtained, which was around 124.324 ppm. Meanwhile, the greatest total flavonoid content (TFC) concentration was found at 80°C and 30 MPa, around 840.595 ppm. The SCCO2 extract more flavonoid compounds compare to phenolic compounds. Thus, the best extraction conditions of SCCO2 extraction of phenolics and flavonoids content has been obtained in this study.