

## ABSTRAK

Seledri (*Apium graveolens* L.) merupakan tanaman dalam famili *Apiaceae* yang kaya akan nutrisi dan dikenal luas sebagai sayuran serta bahan penyedap. Tanaman seledri dilaporkan memiliki manfaat kesehatan seperti antihipertensi, antibakteri, antiinflamasi, dan antioksidan. Tanaman ini diketahui mengandung berbagai senyawa bioaktif seperti flavonoid, asam fenolat, saponin, tanin, dan steroid. Adanya berbagai jenis asam fenolat yang telah diidentifikasi pada penelitian sebelumnya mendorong penelitian ini untuk melakukan analisis total fenolik, uji antioksidan dan isolasi asam fenolat pada ekstrak metanol tanaman seledri. Analisis total fenolik dilakukan dengan metode kolorimetri dengan reagen Folin-Ciocalteu. Uji antioksidan dilakukan dengan metode DPPH. Isolasi dilakukan dengan 3 metode yakni hidrolisis basa (HB), hidrolisis asam (HA), dan tanpa hidrolisis (TH), diikuti dengan pemisahan menggunakan Kromatografi Lapis Tipis (KLT) dan KLT preparatif. Karakterisasi isolat dilakukan menggunakan spektrofotometri UV-Vis dan spektrometri massa. Hasil penelitian menunjukkan ekstrak metanol seledri melalui maserasi diperoleh 149,31 gram dengan rendemen 16,59%. Total kandungan fenolik diperoleh sebesar  $17,317 \pm 0,058$  mg GAE/g ekstrak. Uji antioksidan ekstrak metanol menghasilkan nilai  $IC_{50}$  sebesar 1724,66 mg/L, yang dikategorikan sangat lemah. Pada ketiga metode diperoleh fraksi HB sebesar 0,175 gram (1,75%), fraksi HA sebesar 0,105 gram (1,05%), dan fraksi TH sebesar 0,110 gram (1,10%). Hasil isolasi asam fenolat menunjukkan pada fraksi HA terdapat adanya senyawa pirogalol dan asam kafeat. Hal ini didasarkan pada hasil pita A2 dengan  $\lambda_{maks}$  230 nm dan 269 nm dan berat molekul 126 m/z yang merupakan karakteristik dari senyawa pirogalol. Sedangkan hasil pita A3 yakni dengan  $\lambda_{maks}$  218, 242, 298, dan 325 nm dan berat molekul sebesar 180,0387 m/z yang merupakan karakteristik dari senyawa asam kafeat.

Kata kunci: *Apium graveolens* L, Asam fenolat, Isolasi, Hidrolisis

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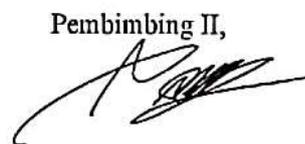
## ABSTRACT

Celery (*Apium graveolens* L.) is a plant in the *Apiaceae* family that is rich in nutrients and widely known as a vegetable and flavoring agent. Celery plants are reported to have health benefits such as antihypertensive, antibacterial, anti-inflammatory, and antioxidant. This plant is known to contain various bioactive compounds such as flavonoids, phenolic acids, saponins, tannins, and steroids. The presence of various types of phenolic acids that have been identified in previous studies prompted this study to conduct total phenolic analysis, antioxidant tests and isolation of phenolic acids in methanol extracts of celery plants. Total phenolic analysis was carried out using the colorimetric method with Folin-Ciocalteu reagent. Antioxidant tests were carried out using the DPPH method. Isolation was carried out using 3 methods, namely base hydrolysis (HB), acid hydrolysis (HA), and without hydrolysis (TH), followed by separation using Thin Layer Chromatography (TLC) and preparative TLC. Isolate characterization was carried out using UV-Vis spectrophotometry and mass spectrometry. The results showed that the methanol extract of celery through maceration obtained 149.31 grams with a yield of 16.59%. The total phenolic content obtained was  $17.317 \pm 0.058$  mg GAE / g extract. The antioxidant test of the methanol extract produced an IC<sub>50</sub> value of 1724.66 mg / L, which was categorized as very weak. In the three methods, the HB fraction was obtained at 0.175 grams (1.75%), the HA fraction was 0.105 grams (1.05%), and the TH fraction was 0.110 grams (1.10%). The results of the isolation of phenolic acids showed that the HA fraction contained pyrogallol and caffeic acid compounds. This is based on the results of the A2 band with  $\lambda_{\max}$  230 nm and 269 nm and a molecular weight of 126 m / z which are characteristics of the pyrogallol compound. While the results of the A3 band are with  $\lambda_{\max}$  218, 242, 298, and 325 nm and a molecular weight of 180.0387 m/z which are characteristics of the caffeic acid compound.

Keyword: *Apium graveolens* L, Phenolic acid, Isolation, Hydrolysis

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