5	**Jurnal nasional terakreditasi (Sinta 1 dan 2)** Judul Artikel: Profile of Flavonoid and Antioxidant Activity in Cell Suspension Culture of Elaeocarpus grandiflorus, Penulis: Noor Aini Habibah, Nugrahaningsih Nugrahaningsih, Safitri Safitri, Fajar Musafa, Nur Wijawati, Nama Jurnal: Biosaintifika, Volume Jurnal: 13, Nomor Jurnal: 3, Tahun Terbit Jurnal: 2021, Halaman: 328-335, ISSN: eISSN : 23387610 | pISSN : 2085191X, Penerbit: UNNES [Lihat URL] [Lihat URL Dokumen] [Lihat URL index jurnal] **Komentar dari Reviewer :** *Penulis 2/4 Sesuai bidang keilmuan Bahasa dan sistematika tulisan baik, IMRADC ada dan jelas, unsur kelengkapan sesuai kaidah ilmiah Informatif profil flavonoid dan antioksidan kultur sel suspensi E grandiflorus Terbitan JNB Sinta 1 (2021) supaya karil ini dpt dinilai mhn pengusul melampirkan bukti ethical approval penelitian.*	1	3.3	3.3

Yth Penilai PAK
Usulan Jabatan Fungsional

Artikel berjudul *Profile of Flavonoid and Antioxidant Activity in Cell Suspension Culture of Elaeocarpus grandiflorus* merupakan salah satu publikasi dari penelitian berjudul: Produksi Senyawa berpotensi Antidiabetes melalui Teknologi Cell Suspension Culture Rejasa (Elaeocarpus grandiflorus) yang didanai oleh DRPM dimana saya sebagai salah satu anggota penelitian.

Penelitian ini tidak menggunakan hewan coba, namun menggunakan ekstrak hasil kultur Rejasa menggunakan media tanam Cell Suspension Culture, seperti yang tercantum dalam metode penelitian dalam artikel (Gambar 1). Pada penelitin ini juga tidak menghasilkan atau membuat tumbuhan transgenic sehingga tidak memerlukan ethical clearance.

Based on the explanation, it is necessary to conduct further studies on the production of bioactive compounds in the suspension culture of *Elaeocarpus grandilforus* cells induced by 2, 4-D. This is an effort to find the proper technique and procedure to increase the production efficiency of bioactive compounds in *E. grandilforus* through cell suspension culture. Therefore, this study aimed to analyze the flavonoid profile and antioxidant activity of the suspension culture extract of *E. grandiflorus* cells.

METHOD

This research was an experimental study using *E. grandiflorus* cell suspension culture induced with a single dose of 2, 4-D for 30 days. This study analyzed the flavonoid content of 5, 10, 15, 20, 25 and 30 days-old of *E. grandiflorus* cell suspension culture.

Plants culture preparation

The two-year-old *Elaeocarpus grandiflorus*'s leaf stalk was collected and processed in the Laboratory of Plant Tissue Culture of the Universitas Negeri Semarang, aseptically. The leaf stalk was sterilized using bactericide and fungicide followed by 5.25% NaClO bleach solution. A woody plant medium (WPM) was used as a growth medium and 2.5 ppm of 2,4-D (Sigma Aldric, Darmstadt, Germany) as a growth regulator.

Cell culture induction

The cell culture medium was made using woody-plant medium (WPM) stock dissolved in distilled water by following manufacture procedure. The prepared medium was supplemented with 2.5 ppm 2, 4-D, and added with distilled water to get the required volume. To enrich the nutrition, a 3% sucrose from total solution was added homogenously. The solution was then added with HCl or NAOH until the pH reached 5.8. After medium preparation was complete, approximately 20 ml of the medium was poured into 100 ml Erlenmeyer flasks and covered using sterile cap. The solution in Erlenmeyer flasks were sterilized using autoclave chamber with pressures between 1.1-1.5 kg cm^{-2} and temperature was settled at 121°C, for 20 minutes.

The calluses were well cared for 5-months before ready for cell culture induction. After grew properly, 1 g of callus was transferred into a 100 ml Erlenmeyer containing 20 ml of WPM and shaken at

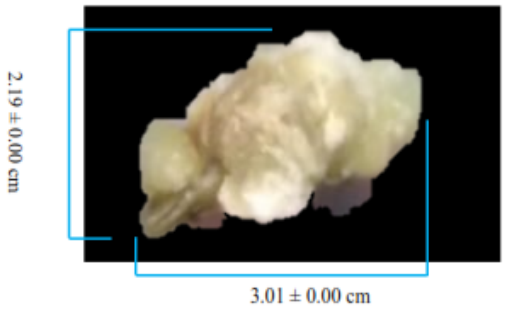

Figure 1. Callus from petiole of *E. grandiflorus* used for suspension culture induction.

Flavonoid extraction

Flavonoids were extracted from the suspension culture of *E. grandiflorus* by following the procedure from Hao et al., (2009). The dry cells were ground using mortar and pestle to make a fine powder, then soaked in methanol-1% HCl solution (v/v) and added with 2 N HCl (v/v). The processed extract was rested and incubated at 90 °C, for one hour, then dried and resuspended in methanol for antioxidant activity and LC-MS analysis.

Antioxidant activity analysis

Five mg of solid DPPH was dissolved into 100 ml of methanol to make DPPH stock solution. A control solution was prepared by mixing 50 ppm DPPH stock solution with 2 ml of methanol and homogenized by pipetting. Two ml of the samples were added with 2 ml DPPH stock solution and incubated at 27 °C, for 30 minutes. The positive reaction of the DPPH activity was performed by the changing color, it indicated that the samples were ready for the antioxidant activity measurement process. Antioxidant activity was measured using the UV-Vis spectrophotometer absorbance values at a wavelength of 517 nm and conducted for three times repetition.

LC-MS analysis

The obtained extract was dissolved in methanol solvent to reach a concentration below 100 ppm using pipetting technique to obtain a homogeneous solution. Sample's pellet and supernatant was separated using centrifugation at 8000 rpm for 10 minutes. After separation process, the supernatant was collected for protein precipitation was processed.

Gambar 1. Printscreen metode penelitian dalam artikel)