Effect of Gamborg media on the phytochemical profile of callus Orthosiphon aristatus purple and white-purple varieties: the first step in the production of natural drug products

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Orthosiphon aristatus (Blume) Miq. is a medicinal plant that has long been known in Indonesia and has become a national flagship which has been clinically tested by BPOM.

In 2018 Cai reported that the levels of sinensetin in O. aristatus were 2,719 mg / g, levels of rosmarinic acid in leaves were 19,861 mg / g, and levels of eupatorin in leaves were 4,731 mg / g.

The levels of the main secondary metabolites in the O. aristatus are still small, so efforts are needed to increase the levels, one of which is plant tissue culture techniques.

**INTRODUCTION**

**METHODS**

Young leaves of purple and white varieties of O. aristatus

Young leaf sterile explants

Inoculation on gamborg media and added 2.4 D 0.4 ppm, 0.8 ppm and 1.2 ppm

Callus

Analysis of Secondary Metabolite (HPLC)

**RESULT**

WPC1 = White Purple Callus (Gamborg + 2,4 D 0.4 ppm)
WPC 2 = White Purple Callus (Gamborg + 2,4 D 0.8 ppm)
WPC3 = White Purple Callus (Gamborg + 2,4 D 1.2 ppm)
PC1 = Purple Callus (Gamborg + 2,4 D 0.4 ppm)
PC2 = Purple Callus (Gamborg+ 2,4 D 0.8 ppm)
PC3 = Purple Callus (Gamborg+ 2,4 D 1.2 ppm)

<table>
<thead>
<tr>
<th>Sample</th>
<th>Rosmarinic acid (% w/w)</th>
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<tbody>
<tr>
<td>White-purple variety callus acetone extract</td>
<td>1.23</td>
</tr>
<tr>
<td>purple variety callus acetone extract</td>
<td>1.59</td>
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Callus formed from Gamborg B5 basal medium can be developed at the stage of cell suspension culture to produce natural drug products from O. aristatus, especially rosmarinic acid.