



Synthesis and antioxidant properties of C-4-allyloxy-phenylcalix[4]resorcinarene

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Abstract : The synthesis of C-4-allyloxy-phenylcalix[4]resorcinarene (AOPC) has been conducted through the following steps, i.e. 1) allylation reaction of 4-hydroxy-benzaldehyde to give 4-allyloxy-benzaldehyde, and 2) synthesis of AOPC via condensation of 4-allyloxy-benzaldehyde with an acid catalyst. The synthesized products were characterized using FTIR, ¹H-NMR, and LC-MS spectrometer. The product of 4-allyloxy-benzaldehyde compound was obtained in light yellow liquid with 85% in yield. Meanwhile, the AOPC was attained in dark red solid with 67% in yield and m.p. 237-238 °C (decomposed). The antioxidant activity assays of AOPC was conducted by 1,1-diphenyl-2-picrylhydrazil (DPPH) methods with quercetin as a control. Antioxidant assay of AOPC and quercetin showed ES₅₀ 12.46 and 34.90 respectively. This result showed that AOPC compound has higher antioxidant activity than quercetin and categorized as a strong antioxidant.

Keywords: C-4-allyloxyphenylcalix[4]resorcinarene; synthesis; antioxidant; DPPH; quercetin.

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