



Synthesis and Antioxidant Assay of C-2-Ethoxyphenylcalix[4]resorcinarene

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Abstract:C-2-ethoxyphenylcalix[4]resorcinarene (CEFKR) can be synthesized in 2 steps; i.e. ethylation of 2-hydroxybenzaldehyde with diethyl sulphate (DES) and condensation of 2-ethoxybenzaldehyde and resorcinol with acid catalyst. The product 2-ethoxybenzaldehyde was analyzed with infra red (FT-IR) spectrophotometer and GC-MS. The product 2-ethoxyphenylcalix[4]resorcinarene was analyzed with FT-IR, ¹H NMR and ¹³C NMR. The product of condensation was subjected to antioxidant assays using DPPH(1-1-diphenyl-2-picrylhydrazyl) method.

Reaction of 2-hidroxybenzaldehyde, DES, and NaOH was performed by refluxing the mixture for 2.5 hours and gave 2-ethoxycalix[4]resorcinarene in viscous dark yellow 84.68 % yield. The aromatic electrophilic substitution-cyclization of ethylation product and resorcinol in presence of HCl gave C-2-ethoxyphenylcalix[4]resorcinarene as yellow solid in 99.26 % yield with m.p> 380 °C. It has strong antioxidant activity in DPPH methods with ES₅₀ 83.62 ppm.

Keywords :synthesis, antioxidant assay, 2-ethoxyphenylcalix[4]resorcinarene.

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