



Antioxidant Assay of C-2-Hydroxyphenylcalix[4] Resorcinarene using DPPH Method

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Abstract: C-2-Hydroxyphenylcalix[4]resorcinarene can be synthesized via condensation of 2-hydroxybenzaldehyde and resorcinol with acid catalyst. Structural elucidation of products was performed using FT-IR spectrophotometer, GC-MS, 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-hydroxybenzaldehyde, HCl and ethanol was performed by refluxing the mixture for 24 hours. The aromatic electrophilic substitution-cyclization 2-hydroxybenzaldehyde and resorcinol in presence of HCl gave C-2-hydroxyphenylcalix[4]resorcinarene as yellow solid in 93.14 % yield with m.p > 368.8 °C. The product was analyzed with FT-IR, ¹H NMR and ¹³C NMR. It has strong antioxidant activity in DPPH methods with ES₅₀ 77.4322 ppm.

Keywords : antioxidant assay, 2-hydroxyphenylcalix[4]resorcinarene, DPPH method.

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