

Sintesis turunan lawson 2-hidroksi-1,4-naftoquinon dari sinamaldehyda menggunakan nanokatalis CuFe_2O_4 = Synthesis of lawsone 2 hydroxy 1 4 nafttoquinone derivates from cinnamaldehyde using nanocatalyst CuFe_2O_4

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Abstrak

ABSTRAK

Metode sederhana untuk mensintesis turunan lawson 2-Hidroksi-1,4-naftoquinon dari sinamaldehyda telah berhasil dilakukan menggunakan nanokatalis CuFe_2O_4 . Nanokatalis CuFe_2O_4 diperoleh dengan metode kopresipitasi dan dikarakterisasi menggunakan XRD, TEM, dan PSA. Hasil TEM menunjukkan nanokatalis CuFe_2O_4 yang memiliki ukuran 15-36 nm. Nanokatalis CuFe_2O_4 mampu mengkatalis pembentukan senyawa turunan lawson 2-Hidroksi-1,4-naftoquinon dan dapat digunakan sampai 5 kali pengulangan reaksi dengan recovery yang baik. Senyawa turunan lawson yang diperoleh dikarakterisasi melalui Spektrofotometer UV-Vis, Spektroskopi IR, dan GCMS. Produk yang dihasilkan memiliki yield sebesar 48,62 hingga 81,52 dan memiliki aktivitas antioksidan dengan nilai IC_{50} sebesar 8 ppm, 50 ppm dan 77 ppm.

ABSTRACT

A simple method for synthesis of derivatives lawsone 2 hydroxy 1,4 nafttoquinone from cinnamaldehyde has been successfully synthesis used nanocatalyst CuFe_2O_4 . Nanocatalyst CuFe_2O_4 were obtained from co precipitation method and characterized by XRD, TEM and PSA. The result of TEM show that CuFe_2O_4 nanocatalyst that were 15 36 nm. Nanocatalyst CuFe_2O_4 was able catalyzed the formation of the lawsone derivatives 2 hydroxy 1,4 nafttoquinone and can be used up to 5 times in the same reaction procedure with good recovery. The compounds obtained were characterized by Spectrofotometry UV Vis, Spectroscopy IR and GCMS. The product is obtained in fairly high yield from 48,62 to 81,52 and has antioxidant activity with IC_{50} value 8 ppm, 50 ppm and 77 ppm.