

SINTESIS SENYAWA 4-((2-(2,4-DINITROFENIL)HIDRAZON) METIL)-2-METOKSIFENOL DARI VANILIN SEBAGAI SENSOR KIMIA

Desinta Diyah Puspitasari
11/316938/PA/14057

INTISARI

Telah disintesis senyawa 4-((2-(2,4-dinitrofenil)hidrazon)metil)-2-metoksifenol dari vanilin sebagai sensor kimia. Sintesis dilakukan dengan mereaksikan vanilin dan 2,4-dinitrofenilhidrazin melalui reaksi adisi-eliminasi dengan katalis asam. Senyawa hidrazon hasil sintesis diidentifikasi dengan Spektrofotometer Inframerah dan titik leleh. Senyawa hasil sintesis diuji sebagai indikator titrasi asam-basa dan deteksi kerusakan bahan pangan.

Sintesis senyawa 4-((2-(2,4-dinitrofenil)hidrazon)metil)-2-metoksifenol dihasilkan rendemen 33,4% dengan titik leleh 269,9-271,6 °C. Hasil karakterisasi dengan Spektrofotometer Inframerah menunjukkan adanya gugus hidrazon (=N-NH). Uji senyawa terhadap sensor kimia sebagai indikator titrasi asam lemah-basa kuat dibandingkan dengan indikator fenolftalein memiliki kesalahan $\pm 0,2\%$. Sedangkan uji sensor kimia sebagai deteksi kerusakan bahan pangan menunjukkan bahwa senyawa hidrazon diaplikasikan pada ikan busuk menghasilkan perubahan warna dari jingga menjadi cokelat kemerahan.

Kata kunci: hidrazon, vanilin, sensor kimia, indikator

SYNTHESIS OF 4-((2-(2,4-DINITROPHENYL)HYDRAZONE) METHYL)-2-METHOXYPHENOL FROM VANILLIN AS CHEMOSENSORS

Desinta Diyah Puspitasari
11/316938/PA/14057

ABSTRACT

Synthesis of 4-((2-(2,4-dinitrophenyl)hydrazone)methyl)-2-methoxy phenol from vanillin as chemosensors has been conducted. Synthesis was done by reacting vanillin and 2,4-dinitrophenylhydrazine through the addition-elimination reaction with an acid catalyst. Synthesized hydrazone compounds were identified by Infrared Spectrophotometer. The compounds were tested as indicator of acid-base titration and detection of spoiled food.

Synthesis of 4-((2-(2,4-dinitrophenyl)hydrazone)methyl)-2-methoxy phenol produced 33.4% of yields with melt was 269,9-271,6 °C. The result of characterization by Infrared Spectrophotometer showed a hydrazone group (=N-NH). The compound test of chemosensor as an indicator of a weak acid-strong base titration compared with phenolphthalein indicator has $\pm 0.2\%$ of errors. While the chemosensor test for detection of spoiled food indicated that the hydrazone compound could be applied to the fish rotten producing a color change from orange to brown reddish.

Keywords: hydrazone, vanillin, chemosensors, indicator