

Synthesis of nitrogen-substituted pyran-2-ones via radical cyclisation approach

ABSTRACT

Four new 4-N-substituted pyran-2-ones (δ -lactones) were successfully synthesised from their corresponding cyanoalcohols via two reaction steps; (i) acylation and (ii) radical cyclisation. Four cyanobromoesters that were produced from acylation were treated with tris(trimethylsilyl)silane (TTMSH) and azobisisobutyronitrile (AIBN) in toluene to obtain 5-hydro-4-imino-3,6-dimethylpyran-2-one (4a), 4-amino-5-hydro-3,6,6-trimethylpyran-2-one (4b), 3,5-dihydro-4-imino-6-methylpyran-2-one (4c), and 3,5-Dihydro-4-imino-6,6-dimethylpyran-2-one (4d).

Keyword: Pyran-2-one; 3-ene-lactones; Radical cyclisation; TTMSH; AIBN; 6-exo-dig.