

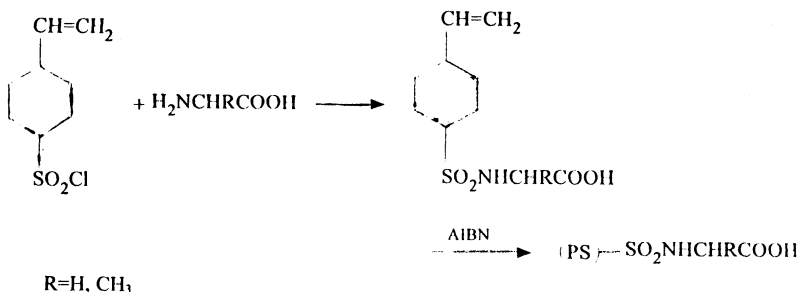
NOTE

Polymer Supported α -Amino Acids: Synthesis and Application in Alkylation of Arenes

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Some of the polymer-supported α -amino acids have been prepared. The reactions of these polymers in the presence of sulfuric acid and arenes under Friedel-Crafts conditions were studied.

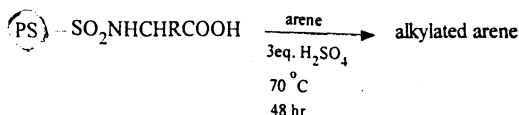
Friedel-Crafts and related alkylation reactions of arenes are most important in organic chemistry. These and related reactions have been well studied and reviewed in many reports and monographs¹⁻⁴. Various electrophilic sources could be used in the Friedel-Crafts alkylation reactions including alkyl halides, alkenes, alkynes, alcohols, esters, ethers, alkanes, mercaptans and thiocyanates⁵, in addition, the Friedel-Crafts type reaction of various kinds of nitrogen containing compounds including 1,3-dicyclohexylcarbodiimide, amides, sulfonamides and urea derivatives^{6,7}. In the reactions of the above compounds with benzene in the presence of acid catalyst such as H_2SO_4 or $AlCl_3$, carbon-nitrogen single bond was seen. To develop a facile synthetic method for preparation of various 2-arylacetic acid derivatives, which could be used as starting material for preparation of nonsteroidal antiestrogen tamoxifen derivatives⁸⁻¹⁰, we intended to examine the reaction compounds under Friedel-Crafts conditions. Polymer supported reagents, catalysts and substrates have been used widely in organic synthesis. We reported the preparation and application of some polymer-supported reagents which contain nitrogen bound reagents^{11,12}. Here, we report the preparation of some polymer containing α -amino acids (Scheme-1).



Scheme-1

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p-Styrene sulfonyl chloride was prepared from *p*-styrene sulfonic acid sodium salt and then reacted with alanine and glycine. The prepared monomer was polymerized with AIBN. The obtained polymer was reacted with arenes and concentrated H₂SO₄ under Friedel-Crafts conditions (Scheme-2.)



Scheme-2

The reaction was performed in an aromatic compound as solvent. In the reaction of polymer supported glycine and *p*-xylene, 2,5-2',5'-dixyleyl methane was obtained. Under this condition we used benzene instead of *p*-xylene but only benzene sulfonic acid was separated. In the reaction of polymer-supported-alanine in the presence of 3eq. concentrated H₂SO₄ and benzene or *p*-xylene, the sulfonated products for each of the starting materials was identified.

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