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Multicomponent reaction to synthesize 3,5-dicyano-6-sulfanylpyridine and its derivatives

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Multicomponent reactions (MCR) have gained popularity over the past few decades in the world of chemistry. (MCR) is a chemical reaction where 3 or more compounds react together to produce a one product. The concept of privileged medicinal scaffolds was originally introduced by Merck researchers, during the course of their work on benzodiazepines, recently acting as a guiding principle in modern drug discovery. Privileged scaffolds generally consist of a rigid ring structure such as a heterocyclic ring. 3,5-Dicyanopyridines are an important privileged heterocyclic scaffold. In our research, we explored the methodology to synthesize 4-aryl-6-sulfanylpyridine derivatives by MCR. The derivatives of 4-phenylpyridine are reported to show excellent biological activities. A three-component reaction of 4-anisaldehyde, malonitrile, and NaSH produced a very important intermediate-2-amino-3,5-dicyano-6-mercapto-4-(4-methoxyphenyl)-pyridine. Alkylation reaction on sulfur of this intermediate will result in various 3, 5-dicyano-6-sulfanyl pyridine products as desired. All products were characterized by 1H NMR and 13C NMR spectroscopy.

Biography

Mayasim Almotairi from Saudi Arabia. She is 27 years old. She did bachelor degree of general chemistry from King Abdulaziz University. She has been trained at Eye hospital laboratory and Al-mostaqbal hospital. Now, she is on final semester of master since chemistry.

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