SYNTHESIS OF PYRIDO-PYRIMIDINE AND IMIDAZO-PYRIDINE DERIVATIVES

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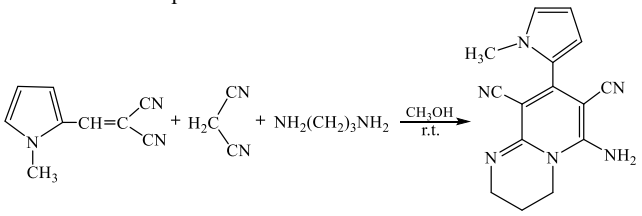
Nitrogen containing heterocycles are important molecules in organic chemistry and their structures are present in many natural products and play important role in medicinal chemistry. Pyrido[1,2-a]pyrimidine derivatives shows pharmacological activities such as antidepressant, gastrointestinal protective, neurotropic, stress-protecting and anticancer properties. This structure is also a component of some of the marketed drugs, like pemirolast, pirenperone and barmastine.

Compound (1) was obtained on the base of the three component one pot reaction between 2-((1-metyl-1*H*–pyrrolyl) methylene) malononitrile, malononitrile and propylenediamine at room temperature in methanol media.

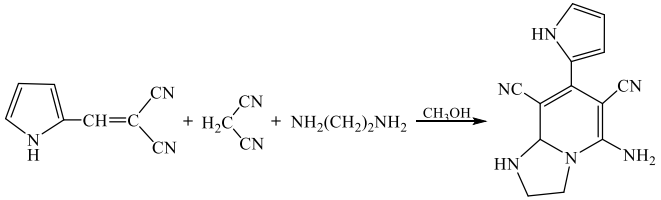


(1)

Scheme 1: Reaction scheme of synthesis of 6-amino-8-(1-methyl-1H-pyrrol-2-yl)-3,4-dyhidro-2H-pyrido[1,2-α]pyrimidine-7,9-dicarbonitrile (1)

Due to its wide applications imidazo[1,2-α]pyridine scaffold is one of the most potential bicyclic, heterocyclic rings that is recognized as a "drug prejudice" and used in medicinal chemistry such as anticancer, antimycobacterial, antileishmanial, anticonvulsant, antimicrobial, antiviral, antidiabetic, proton pump inhibitors. This scaffold has also been represented in various marketed preparations such as zolimidine, zolpidem, alpidem.

(2) derivative of imidazo[1,2-α]pyridine was synthesized as a result of reaction of 2-((1*H*–pyrrol-2-yl)methylene)malononitrile, malononitrile and ethylendiamine by one pot three component cyclization.



(2)

Scheme 2: Reaction scheme of synthesis of 5-amino-7-(1H-pyrrol-2-yl)-1,2,3,8a-tetrahydroimidazo[1,2-α]pyridine-6,8-dicarbonitrile (2)

The structure of these compounds was approved by ^{1}H and ^{12}C NMR spectroscopy.