



## An efficient one-pot synthesis of dimethyl 1-(Aryl)-5-cyano-4-(cyclohexylamino)-1,2,5,6-tetrahydro-6-oxopyridine-2,3-dicarboxylate derivatives

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### Abstract:

The reactive 1:1 intermediate produced in the reaction between cyclohexyl isocyanide and electron- deficient acetylenic esters or dimethyl acetylene dicarboxylate was trapped by 2-cyano-N-(Aryl) acetamides to provides highly functionalized oxopyridine (potential synthetic and pharmaceutical interest ) in acetonitrile under mild reaction conditions at ambient temperature after 24 h in fairly good yields. The structures of the products were corroborated spectroscopically (IR, 1H- and 13C-NMR), by EI - MS, and elemental analysis. A possible mechanism for this reaction is proposed. This present method carries the advantage that not only is the reaction performed under neutral conditions, but also the substances and reagents can be mixed without any modification or activation. The simplicity of this procedure and use of simple starting materials makes it an interesting alternative to other approaches.

**Keywords:** multicomponent reactions, cyanoacetamides, zwitterions, oxopyridine,

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### 1. Introduction: