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Synthesis of triazinanone, oxadiazinanone derivatives of 1, 8-naphthyridine as antibacterial agents

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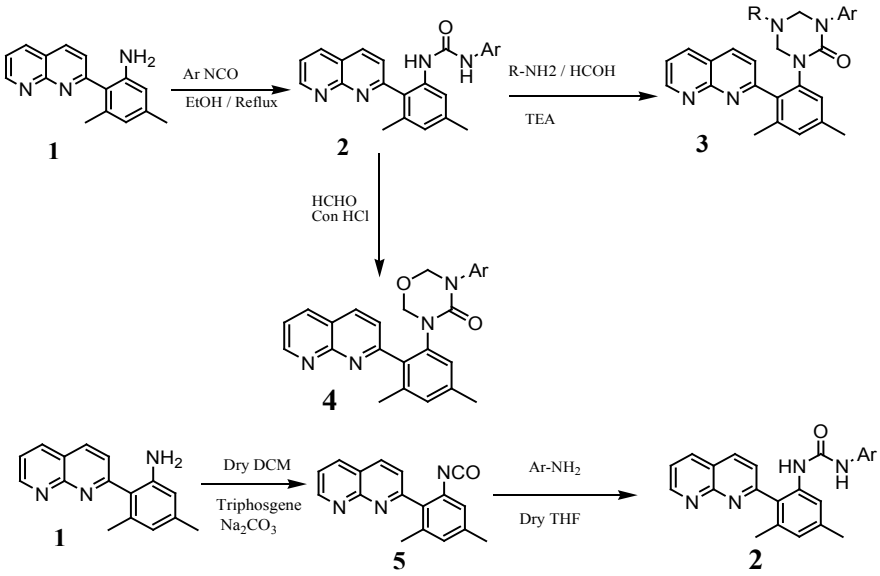
1, 8-Naphthyridine is an important class of pharmaceutically active compound as its derivatives have excellent and diverse biological activities, such as diuretic, antimalarial, antihypertensive and antibacterial activity. Nalidixic acid and gemifloxacin are the derivatives of 1, 8-naphthyridines which are being used for chronic urinary tract infection and antibacterial agent respectively. Naphthyridine compounds react with adenosine receptors of sub type A1 and A2A. In the present work, 3, 5-dimethyl-2-(1, 8-naphthyridin-7-yl)benzenamine (1) reacts with various arylisocyanates to form 1-(3, 5-dimethyl-2-(1, 8-naphthyridin-7-yl)phenyl)ureas (2a-e). The compounds (2a-e) are converted to different 3-(3, 5-dimethyl-2-(1, 8-naphthyridin-7-yl)phenyl)-1, 3, 5-triazinan-2-ones (3a-j) by the reaction of urea derivatives (2a-e) and arylamines in EtOH in presence of TEA. Oxadiazinan-4-ones (4a-e) are obtained by the reaction of (2a-e) and formaldehyde in ethanol. Urea derivatives (2a-e) are also converted to isocyanates (5a-e) by treating 2a-e with triphosgene in DCM. All the new derivatives synthesized are screened for the antibacterial activity.



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