

One-Pot Sequential Synthesis of Quinazolin-8-ol derivatives employing Heterogeneous Catalyst for Suzuki-Miyaura coupling



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Abstract

Quinazolines are pivotal heterocycles in medicinal chemistry. These have been isolated from different plants and microorganisms and are often the central core of complex natural products such as farinamycin [1], phaitanthrin C and methylisatoid [2] etc. (Figure 1) which have various biological. Further, many synthetic quinazoline derivatives such as batracyclin for its anti-tumor activity [5], and the piperazine-containing trimazosin and prazosin for the treatment of high blood pressure, symptoms of an enlarged prostate, post-traumatic stress disorder (PTSD) and preventing neurodegenerative diseases such as Parkinson's disease (PD). All of these derivatives have been synthesized by multistep reactions with low to moderate yields. We have reported an efficient and eco-friendly method for a one-pot sequential synthesis of quinazolin-8-ol derivatives. A variety of boronic acids were used for Suzuki-Miyaura coupling with commercially-available SiliaCat@DPP-Pd heterogeneous catalyst. Use of this catalyst ensures minimal leaching of palladium in the product and alleviates the need of further purification. The reaction conditions used in the four synthetic steps were optimized to telescope three intermediates without first requiring their isolation to establish an efficient and eco-friendly one-pot synthesis. Significance, synthetic strategy, experimental details and characterization of these newly developed interesting molecules

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Speaker Publications:

1. "An efficient and scalable approach for the synthesis of piperazine based glitazone and its derivatives"; Synthetic Communications, 2020/ 50(14):1-7.
2. "Design, Synthesis and Characterization of Pyrimidine based Thiazolidinedione Derivatives" Asian Journal of Chemistry/ 2020/ 32(5):1101-1108.

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Biography:

Vijay Kumar Sharma is pursuing his PhD from Amity University Uttar Pradesh, Sector-125, Noida, India. He has done M.Sc. in Pharmaceutical Chemistry from Guru Nanak Dev University Amritsar, India in 2007. He is working as Senior Research Scientist in Integral Bio Sciences Pvt. Ltd,