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A novel approach to the conjugation of adenine with a quinazoline moiety for the development of a new therapeutic agent

Vasiliki Daikopoulou, Ioanna Vlachou and **Ioannis Papasotiriou**
R.G.C.C. S.A., Greece

A considerable number of substituted adenines have been reported to act as agonists or antagonists for several receptors and enzymes. They interact with adenosine receptors, which are found to be upregulated in various tumor cells. In order to enhance their medicinal properties, we decided to add a substituent with an equally significant biological activity. Quinazoline are organic compounds consisting of two fused six-membered aromatic rings, a benzene ring and a pyrimidine ring. Their own substituted derivatives are being synthesized constantly for medicinal purposes such as anticancer agents. Over the years, medicinal chemists have synthesized a variety of quinazoline derivatives by inserting various active groups to the quinazoline moiety using developing synthetic methods. Taking into consideration the above, we have created a pathway for the conjugation of these two molecules (adenine and quinazoline). The purpose of this study is to synthesize 9-(4-methoxyquinazolin-2-yl)-9H-purin-6-amine as a precursor of a final structure. Both 2-adenine-4-methoxy quinazoline and final compound are going to be studied for their possible biological and medicinal activity. The conjugation of adenine with 2-chloro-4-methoxy quinazoline is achieved by using a strong base and silica gel in high temperature via regioselective N-arylation via nucleophilic aromatic substitution (SNAr).

Biography

Vasiliki Daikopoulou has her expertise in Organic and Synthetic Chemistry. She has completed her Bachelor degree in Chemistry at Aristotle University of Thessaloniki and Master's degree in Organic Synthesis and Natural Products at the same institute. She is currently working in R&D Department of R.G.C.C. S.A

daikopoulou.vasiliki@rgcc-genlab.com

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