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Some anrorc type reactions in the chemistry of Five-Membered heterocycles containing three heteroatoms

Abstract:

Heterocycles are a class of organic compounds that contain atoms of elements other than carbon, such as phosphorus, nitrogen, sulfur, or oxygen. These molecules play an important role in the development of pharmaceuticals, as they serve as models for designing new compounds with desired properties. Azoles, which are a group of five-membered heterocyclic compounds containing nitrogen, sulfur, and oxygen atoms as heteroatoms, are known for their exceptional biological activities, include antifungal, anticancer, and anti-inflammatory properties. The main method for producing 1,2,4-triazole-3-thiones is the cyclocondensation of corresponding N,N'-disubstituted thiosemicarbazides in a basic medium. This process requires the use of thioisocyanates, which are produced in most cases by starting with highly toxic thiophosgene. We have developed a novel approach to the synthesis of targeted compounds through an ANRORC type reaction using 1,3,4-oxadiazoles, 1,3,4-thiadiazoles or 1,2,4-dithiazoles as starting materials. This is a groundbreaking and previously unexplored process of converting one heterocyclic system into another, which allows us to expand the range of compounds with potential biological activity that can be obtained.

Biography

Anton is a 23-year-old PhD student at Mendeleev University of Chemical Technology (MUCTR). He has already published several papers and abstracts in local journals, and has also taken part in international conferences in Russia. His research focuses on the chemistry of heterocyclic compounds with biological activity. In addition to his academic work, Anton speaks English and a little French.