

ON THE REACTION OF 5-AMINOISOXAZOLES AS AMBIDENT NUCLEOPHILES:

SYNTHESIS OF 4,7-DIHYDROISOXAZOLO[5,4-b]PYRIDINES

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In a continuing program of studies on the chemistry and utilization of isoxazole derivatives, we attempted the reaction of 5-aminoisoxazoles (**1**), which have the properties of both aromatic amines and enamines, with α,β -unsaturated ketones (**2**). Treatment of **1** with **2** in ethylene glycol (EG) at room temperature afforded the corresponding amino-adducts (**3**), shown in the Figure, in good yields. On the other hand, when the reactions were carried out using t-butanol as the solvent with heating, the 4,7-dihydroisoxazolo[5,4-b]pyridines (**5**) were obtained in excellent yields. Reaction of **1** with m-nitrobenzaldehyde also afforded the products **6** and **7**. Conversion of the amino-adducts (**3**) into the cyclized products by heating did not afford the Skraup-type products (**4**) but gave **5**. These results suggest that **3** and **5** are kinetically and thermodynamically controlled products, respectively, and the formation of **5** from **3** may result via the retro "Michael" reaction of **3** to the starting **1** and **2**.

