A METAL MEDIATED SYNTHESIS OF CHELATE REAGENT: 2,3,5,6-TETRA(α-PYRIDYL)PYRAZINE

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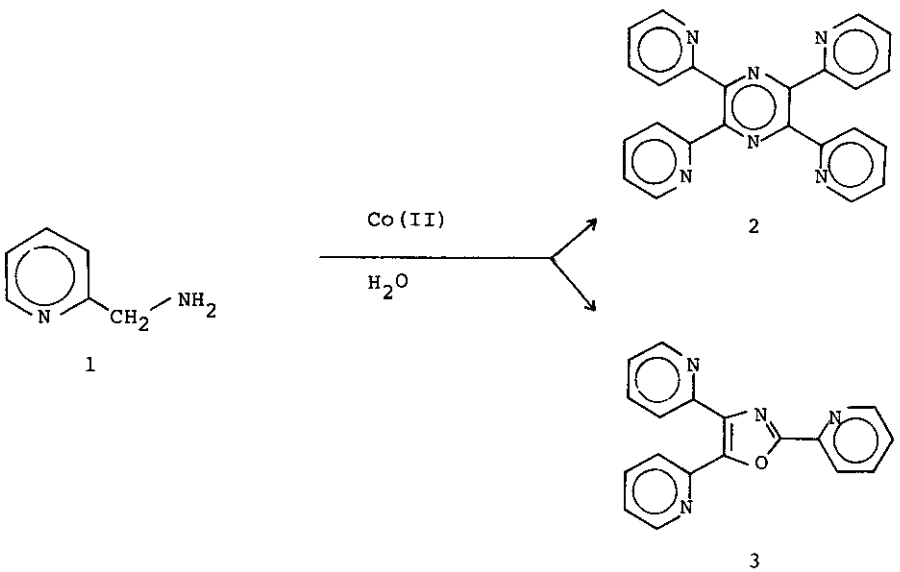
As one of reagents for Fe(II) ion, an excellent tridentate chelate compound, 2,3,5,6-tetra(α-pyridyl)pyrazine (2) has been reported which was synthesized in 32% yield by reaction of α-pyridoin with ammonium acetate at 180°C without using solvent.[1] In the course of synthesizing heterocycles by use of metal ions, we prepared 2 in 37% yield by reaction of 2-aminomethylpyridine (1) with Co(II) chloride in water under milder conditions. A by-product (3) was isolated, and a possible mechanism for the formation of 2 and 3 will be discussed. Also, synthesis of 8-cyanomethyltheophylline will be shown in the light of Fe(III)/Fe(II) redox reaction.



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1) H. A. Goodwin and F. Lions, J. Am. Chem. Soc., 81, 6415 (1959).