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Solid state oxidation of some 1,4-dihydropyridine derivatives by potassium permanganate supported on montmorillonite K10

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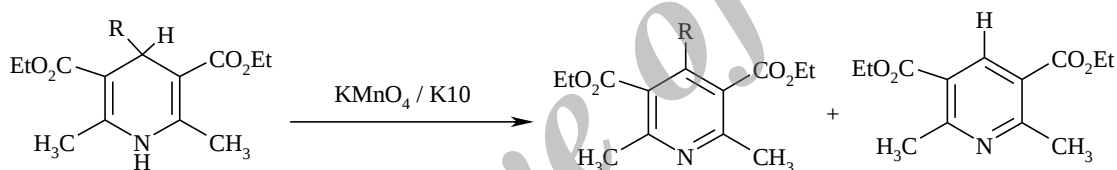
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1,4-Dihydropyridines are very interesting compounds and play an important role in synthetic therapeutic and bioorganic chemistry [1]. The oxidative aromatization of dihydropyridines to the corresponding pyridine derivatives constitutes the principal metabolic route in particular in biologically significant NADH redox process [2].

Potassium permanganate is a good reagent for oxidation of many compounds. It was shown that the adsorption on to solid supports can change the reactivity and selectivity of KMnO_4 in oxidation reactions [3].

In Connection with our previous work on the chemistry of 1,4-dihydropyridines [4,5], we wish to report the results obtained from a study of the oxidation of some 1,4-dihydropyridines with potassium permanganate absorbed on the montmorillonite K10 under solvent free conditions. This method provides pyridines in good yields. We have also investigated the effect of the type and nature of the 4-substituents.



The solid-phase synthesis has several advantages because solvents are often expensive, toxic, difficult to remove and are environmentally polluting. In conclusion, this method leads to a benign and attractive procedure for the oxidation of 1,4-dihydropyridines.

References

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