PTSA/NaNO₂ as an Efficient System for Oxidative Aromatization of 1,4-Dihydropyridines in Water at Room Temperature

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Metabolic studies of 1,4-dihydropyridines (1,4-DHP) drugs in the human body have shown that these compounds are oxidized to pyridine derivatives by the action of cytochrome P450 in the liver [1]. The oxidation of easily available 1,4-DHPs[2] to the corresponding pyridine derivatives constitutes principal metabolic route in biological systems, as well as provides a facile access to the corresponding pyridine derivatives, which show anti-hypoxic and anti-ischemic activities. Therefore, oxidative aromatization of 1,4-DHPs has attracted continuing interests of organic and medicinal chemists and a plethora of protocols has been developed [3-4].

In continuation of our studies on environmentally benign chemical processes [5], Here we report a simple method for the effective oxidation of various 1,4-dihydropyridines to their corresponding pyridine derivatives in the presence of PTSA/NaNO₂ as green system in water at room temperature (Scheme 1).

Scheme 1

In summary, the low cost and availability of the reagents, easy and clean work-up make this an attractive methodology. We believe that the present methodology could be an important improvement over many of the existing methodologies.

REFERENCES