SYNTHESIS OF 2-VINYLBENZIMIDAZOLE

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We have found that 2-vinylbenzimidazole can be obtained in good yield by means of the Wittig reaction in a two-phase aqueous system. Specifically, the readily-accessible 2-chloromethylbenzimidazole was refluxed with triphenylphosphine in dioxane, and triphenyl(2-benzimidazolyl)methylphosphonium chloride, with mp 289°C, was obtained in 81% yield. Aqueous solutions of formaldehyde and sodium carbonate were added to a chloroform solution of this salt, and the mixture was stirred for 30 min. The chloroform layer was separated and extracted with hydrochloric acid. The acid extract was neutralized with dilute ammonium hydroxide, and the precipitated 2-vinyl-benzimidazole was removed by filtration to give a product with mp 186-187° (in agreement with the literature melting point) in 85% yield.

$$\begin{array}{c|c} & CH_2CI & CH_2O \\ \hline \\ H & CH_2CI & N \\ \hline \\ H & CH_2P(C_6H_5)_3 & N \\ \hline \\ CH_2P(C_6H_5)_3 & N \\ \hline \\ CH_2CO_3 & N \\ \hline \\ CH_2CH_2 & N \\ \hline \\ CH_2 & N \\ CH_2 & N \\ \hline \\ CH_2 & N$$

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