

Vilsmeier–Haack reaction

The Vilsmeier–Haack reagent, a chloroiminium salt, is a weak electrophile. Therefore, the Vilsmeier–Haack reaction works better with electron-rich carbocycles and heterocycles. Since pyrrole is very electron-rich, the Vilsmeier–Haack reaction readily takes place. Formylation of methyl pyrrole-2-carboxylate was achieved using the Vilsmeier–Haack reaction.¹⁵ The mechanism is shown below. The resulting methyl 5-formylpyrrole-2-carboxylate, in turn, was converted into nonpeptidic analogues of neurotesin(8–13), which are potential treatment for neuropsychiatric diseases such as schizophrenia and Parkinson's disease.

