

REACTIONS OF AROMATIC N-OXIDES
WITH O-BENZOYL AROMATIC ALDEHYDE CYANOHYDRINS
IN THE PRESENCE OF ACETIC ANHYDRIDE

Toshiyasu Endo and Masatomo Hamana

Faculty of Pharmaceutical Sciences, Kyushu University,

Katakasu, Higashi-ku, Fukuoka 812

During the course of a study on the reaction of acyl-adducts of aromatic N-oxides with various nucleophilic carbon compounds, it was found that aromatic N-oxides in the pyridine series reacted with some O-benzoyl aromatic aldehyde cyanohydrins in the presence of acetic anhydride to give α -substituted products. For example, the reaction of quinoline N-oxide with O-benzoyl p-nitrobenzaldehyde cyanohydrin afforded the O-benzoyl cyanohydrin of 2-(p-nitrobenzoyl)quinoline in high yield. Pyridine, isoquinoline and phenanthridine N-oxides similarly reacted with the O-benzoyl cyanohydrin. Acetic anhydride is essential and the acidity of the aldehyde O-benzoyl cyanohydrin should be considerably high for smooth initiation of the reaction. Thus, O-benzoyl cyanohydrins of p-nitro- and p-carboxybenzaldehydes, as well as 2-pyridinealdehyde, underwent this type of reaction, but derivatives of benzaldehyde and p-chlorobenzaldehyde resisted reaction. Products thus obtained were converted into the corresponding α -aroyl derivatives by hydrolysis with alcoholic potassium hydroxide.