SODIUM TUNGSTATE CATALYSED HYDROGEN PEROXIDE OXIDATIONS OF N-BENZYL ANILINE DERIVATIVES

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Oxidation of amines is a complicated reaction in organic chemistry. Aliphatic secondary amines upon oxidation with hydrogen peroxide gives hydroxyl amines as the major product. Murahashi et al (1) has shown that sodium tungstate in the reaction mixture can catalyse further oxidation of the hydroxyl amine to aliphatic nitrones in good yields. The aim of this study is to extend this useful reaction to N-benzyl anilines for the preparation of C-N Diaryl nitrones which are versatile synthetic intermediates and spin trapping reagents.

The sodium tungstate catalysed hydrogen peroxide oxidation of N-benzyl aniline derivatives gives the corresponding C-N diaryl nitrones. The reaction proceeds best at room temperature in methanol. Five N-Phenyl substituted nitrones (N-Ar-X, where X = H, p-CH_3, p-Cl, m-Cl), were prepared using the above method (yields 61-74%). The products were identified by comparison of their melting points with the litrature values (2) and their IR spectra.

References: 1. Hitoshi M, Zenki, S.I., Shiota, T.,Murahashi, S.I.
J.Chem.Soc.Chem.Comm. 874, (1984).

2. Wheeler, O.H., Gore P.H.,
J. Am. Chem. Soc. 78, 3363, (1956).