THE USE OF SALICYLALDOXIME FOR THE SEQUESTRATION OF Cu(ii) FROM ITS COMPLEXES WITH AMINOACIDS

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N^{ε}-acylated Lysine derivatives and N^{δ}-acylated ornithine derivatives are commonly prepared by blocking the α-amino group as its Cu(ii) complex, acylating the terminal amino group and then removing Cu(ii) to generate the terminal N-acylated aminoacid. The standard method (A.C. Kurts, 1949) for the removal of Cu(ii) as CuS using H_2S, while being generally applicable for most N-acyl derivatives, is not suitable when the acyl moeity contains reactive, easily reducible groups. For our studies on the electrochemistry of polypeptide films containing electroactive groups (A.M. Abeysekera & J. Grimshaw, 1987), it was necessary to synthesise highly pure N^{δ}-p-nitrobenzoyl-L-lysine, and N^{ε}-p-nitrobenzoyl-L-ornithine, to be used in the synthesis of the polypeptides. We report herein the use of the versatile chelating agent, salicylaldoxime to sequester Cu(ii) from its complexes with N^{ε}-p-nitrobenzoyl-L-lysine, and N^{ε}-p-nitrobenzoyl-L-ornithine, to yield the corresponding spectroscopically and analytically pure terminal-N-acylated aminoacids in moderate yields (30-40%). Some observations on the impurity arising from the standard procedure are also reported.

The experimental procedure is simple and involves merely stirring a finely powdered suspension of the Copper complex in an ethanolic solution of salicylaldoxime at room temperature. The precipitated product is extracted with hot water.

References

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Kurtz A.C. (1949) J.Biol.Chem., 180:1253