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Flow Injection-Fluorometric Determination of Amino Acids Utilizing Enhanced Catalytic Reaction*

Hisakazu MORI and Kazue NATSUME

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It was shown that copper(II)-amino acid complexes have an increased catalytic activity upon the autoxidation of phenyl pyridyl ketone hydrazone to a fluorescent compound. On the basis of this finding, amino acids were determined fluorometrically by flow injection analysis. All the seven amino acids studied (L-histidine, L-cysteine, DL-serine, L-alanine, L-glutamic acid, glycine and L-arginine) exhibit a positive catalytic effect. Of the seven, L-histidine and L-cysteine have a comparatively large catalytic effect, i.e., higher sensitivities than other amino acids. Thus the present method permits the determination of L-histidine in the range of $1.26-12.6 \times 10^{-7}$ M, giving a detection limit of 6.3 pmol. This method, with no use of labeling reagent, is simple and realizes the analysis of a sample in about 1 min.

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