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[Lab. of Pharm. Analytical Chemistry]

**Separation of Hydrogen-Bonding Donors in Capillary Electrophoresis
Using Polyethers as Matrix.**

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Addition of poly(ethylene glycol) (PEG) as a free matrix was found to be a novel separation parameter in capillary zone electrophoresis. In the separation of substituted and unsubstituted benzoic acids used as model analytes, attractive interaction with PEG was observed for the analytes with hydroxyl, amide, or amino groups. This interaction is attributable to hydrogen bond formation. The concentration and the polymer length of PEG can control the net strength of the interaction and then the observed separation. This capillary electrophoresis using the hydrogen-bonding mode was successfully applied to the separation of nucleotide.

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[Lab. of Pharm. Analytical Chemistry]

**Kinetic Analysis of Oxazolopyrroloquinoline Formation in the Reaction of
Coenzyme PQQ with Amino Acids by Capillary Zone Electrophoresis.**

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Kinetics of the formation of oxazolopyrroloquinoline (OPQ) derivatives from coenzyme pyrroloquinoline quinone (PQQ) and three α -amino acids (glycine, serine and valine) was studied with the aid of capillary zone electrophoresis. Glycine and valine were, respectively, converted exclusively into the unsubstituted OPQ (OPQ1) and an OPQ with the valinyl residue (Val-OPQ2), while serine gave OPQ1 and Ser-OPQ2 under basic and acidic conditions, respectively. The OPQ formation exhibited a first-order dependence on each of PQQ and the amino acids. The OPQ1 generation from glycine is 45 times faster than that of Val-OPQ2 at pH 7.4. This result is in accord with an observation that PQQ spiked in bovine serum was converted predominantly into OPQ1.

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[Lab. of Pharm. Engineering]

**A Study of Embolizing Materials for Chemo-embolization Therapy of
Hepatocellular Carcinoma: Effects of Particle Size and Dose on
Chitin-Containing *cis*-Diamminedichloroplatinum(II) Albumin Microsphere
Antitumor Activity in VX₂ Hepatic Tumor Model Rabbits.**

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We prepared chitin-containing *cis*-diamminedichloroplatinum(II) (CDDP) albumin microspheres with various particle sizes, and investigated *in vitro* CDDP release; the antitumor effect towards $\times 2$ tumor introduced into rabbits was then examined. It was found that the rate of release of CDDP from chitin-containing CDDP albumin microspheres *in vitro* was increased with reduced particle size.