

## Electrophoresis

### 1. REVIEWS AND BOOKS

- 754 Hatano, H.: Progress chromatography and electrophoresis for technological analysis: chemical speciation and characterization. In: Hatano, H. and Hanai, T. (Editors), *Int. Symp. Chromatogr., 35th Anniv. Res. Group Liq. Chromatogr. Jpn.*, World Scientific, Singapore, 1995, pp. 3-7; C.A., 123 (1995) 357627c - a review without refs.
- 755 Kozulic, B.: Models of gel electrophoresis. *Anal. Biochem.*, 231 (1995) 1-12 - a review with 138 refs.
- 756 Mazereeuw, M., Tjaden, U.R. and Reinhoud, N.J.: Single capillary isotachophoresis-zone electrophoresis: current practice and prospects, a review. *J. Chromatogr. Sci.*, 33 (1995) 686-697 - a review with 60 refs.
- 757 Vasilenko, I.A.: (Physical methods of analysis in biotechnology, biology, and medicine). *Ross. Khim. Zh.*, 38 (1994) 81-86; C.A., 123 (1995) 269432e - a review with 31 refs.

See also 777, 785, 805, 810, 823, 848, 849, 850, 855, 866, 877, 884, 909, 914, 915, 925, 944, 958, 959, 960, 965, 966, 969, 985, 989, 1050, 1075, 1101, 1140, 1285, 1389, 1392, 1394, 1421, 1473, 1475, 1522, 1523, 1564, 1565, 1566, 1583, 1584.

### 2. FUNDAMENTALS, THEORY AND GENERAL

#### 2a. General

- 758 Bier, M., Long, T.D., Marguez, R.B. and Ostrem, J.A.: Buffering system and its use in electrophoretic processes. *U.S. US 5,447,612* (Cl. 204-182.8; C25B7/00), 05 Sep. 1995, US Appl. 11,887, 01 Feb. 1993; 14 pp.; C.A., 123 (1995) 280311k.
- 759 Burlatsky, S.F. and Deutch, J.M.: Solid friction in gel electrophoresis. *J. Chem. Phys.*, 103 (1995) 8216-8227; C.A., 123 (1995) 309764y.
- 760 Gombocz, E.A., Cortez, E.V. and Rammmer, D.H.: Real time gel electrophoresis of biomolecules. *PCT Int. Appl. WO 95 23,245* (Cl. C25B71/00), 31 Aug. 1995, US Appl. 202,059, 25 Feb. 1994; 26 pp.; C.A., 123 (1995) 250664k.
- 761 Kiso, Y.: (Effective factors of electrophoretic mobility). *Kuromatogurafi*, 16 (1995) 148-155; C.A., 123 (1995) 323095n.
- 762 Qin, S. and Cui, R.: (Studies on the effect of electrophoresis experiments). *Xibei Shifan Daxue Xuebao, Ziran Kexueban*, 31 (1995) 103-105; C.A., 123 (1995) 197843q.
- 763 Taj, S., Vadhanam, V.M. and Nagarajan, B.: A modified rapid single cell gel electrophoresis assay. *Med. Sci. Res.*, 23 (1995) 641-643; C.A., 124 (1996) 25078y.
- 764 Thomas, J.D.R.: Illustrating chemical principles by teaching chromatography and electrophoresis. *Fresenius J. Anal. Chem.*, 354 (1996) 136-139.

- 765 Zakharov, S.F., Chang, H.-T. and Chrambach, A.: Reproducibility of mobility in gel electrophoresis. *Electrophoresis (Weinheim)*, 17 (1996) 84-90.

See also 754, 757, 769, 838, 848, 895, 897, 902.

#### 2b. Thermodynamics and theoretical relationships

- 766 Aldroubi, A., Chang, H.-T., Zakharov, S.F. and Chrambach, A.: Determination of optimally resolving gel concentration and migration tissue (path) in gel electrophoresis. *Anal. Biochem.*, 231 (1995) 432-436.
- 767 Altria, K.D. and Rudd, D.R.: An overview of method validation and system suitability aspects in capillary electrophoresis. *Chromatographia*, 41 (1995) 325-331.
- 768 Altria, K.D., Traylen, E. and Turner, N.: Analysis of dissolution test sample solutions by high-speed capillary electrophoresis. *Chromatographia*, 41 (1995) 393-397.
- 769 Ketselson, H.A.M., Brook, M.A. and Pelton, R.H.: Colloidal silicate-bearing hydrosilane groups. *Chem. Mater.*, 7 (1995) 1376-1383; C.A., 123 (1995) 209567t.
- 770 Kitagawa, S., Watanabe, H., Nakashima, M. and Tsuda, T.: (Some phenomena generated by electric field and their applications for separation methods). *Kuromatogurafi*, 16 (1995) 170-171; C.A., 123 (1995) 323099s.
- 771 Radko, S.P. and Chrambach, A.: Molecular sieving by polymer solutions: dependence on particle and polymer size, independence of polymer entanglement. *Appl. Theor. Electrophor.*, 5 (1995) 79-87; C.A., 124 (1996) 15090w.
- 772 Rubio-Hernandez, F.J.: Zeta potential determination of the quartz interface-nonaqueous solutions of lithium chloride. *An. Fis.*, 91 (1995) 61-64; C.A., 123 (1995) 267311r.
- 773 Tatulian, S.A.: Evaluation of divalent cation binding to phosphatidylserine membranes by an analysis of concentration dependence of surface potential. *J. Colloid Interface Sci.*, 175 (1995) 131-137; C.A., 123 (1995) 323064b.
- 774 Xue, H., Kan, J. and Shi, Y.: Effect of internal radius of electrophoretic tube on colloid electrophoresis. *Bull. Electrochem.*, 11 (1995) 399-401; C.A., 123 (1995) 323019r.
- 775 Zhang, H.-W., Kou, X.L. and Hu, Z.D.: The measurement of average hydrodynamic velocity in capillary zone electrophoresis. *Chromatographia*, 41 (1995) 343-348.

See also 759, 832, 833, 851, 856, 858, 859, 863, 869, 872, 875, 879, 886, 898, 904, 906, 910, 913, 919, 921, 922, 933, 949, 1490, 1579.

#### 2c. Relationship between structure and electrophoretic behaviour

- 776 Yang, S., Bumgarner, J.G., Kruk, L.F.R. and Khaledi, M.G.: Quantitative structure-activity relationships studies with micellar electrokinetic chromatography. Influence of surfactant type and mixed micelles on estimation of hydrophobicity and bioavailability. *J. Chromatogr. A*, 721 (1996) 323-335.

## 2d. Measurement of physico-chemical and related values

- 777 Oshurkova, O.V. and Gorshkov, A.I.: (Transfer of ionic substances from one solvent to another using isotachophoresis). *Izv. Vyssh. Uchebn. Zaved., Khim. Khim. Tekhnol.*, 37 (1994) 87-91; C.A., 123 (1995) 209474k - a review with 14 refs.
- 778 Spanos, N., Georgiadou, I. and Lycourghiotis, A.: Investigation of rutile, anatase, and industrial titania/water solution interfaces using potentiometric titration and microelectrophoresis. *J. Colloid Interface Sci.*, 172 (1995) 374-382; C.A., 123 (1995) 209658y.
- 779 Spyrycha, R., Oyama, H.T., Zelenov, A. and Matijevic, E.: Characterization of polymer-coated silica particles by microelectrophoresis. *Colloid Polym. Sci.*, 273 (1995) 693-700; C.A., 123 (1995) 209616h.

See also 905, 1064.

## 3. GENERAL TECHNIQUES

## 3a. Apparatus and accessories

- 780 Andersson, B.-G.: Method and apparatus for electrophoretic analysis. *PCT Int. Appl. WO 95 28,636* (Cl. G01N27/447), 26 Oct. 1995, SE Appl. 94/1,251, 14 Apr. 1994; 12 pp.; C.A., 124 (1996) 4480h.
- 781 Campanile, G.: Automatic apparatus for electrophoretic, electrochemical and chemical analysis. *Eur. Pat. Appl. EP 678,741* (Cl. G01N27/447), 25 Oct. 1995, IT Appl. 94/MI739, 18 Apr. 1994; 11 p.; C.A., 123 (1995) 328754m.
- 782 Fujii, Y. and Sasagawa, T.: (A novel preparative isoelectric focusing apparatus). *Kuromatogurafu*, 16 (1995) 158-159; C.A., 123 (1995) 323096p.
- 783 Fujimoto, C.: Manufacture of multiple glass tubes for capillary electrophoresis. *Jpn. Kokai Tokkyo Koho JP 07,185,359* [95,185,359]] (Cl. B01L3/00), 25 Jul. 1995, Appl. 93/345,849, 24 Dec. 1993; 8 p.; C.A., 123 (1995) 203152g.
- 784 Gruemmer, G., Knippele, E., Budde, A., Brockmann, H. and Treichler, J.: An electrophoretic instrumentation for the multi-parameter analysis of cells and particles. *Instrum. Sci. Technol.*, 23 (1995) 265-276; C.A., 123 (1995) 317656e.
- 785 Hirokawa, T.: (Multiple-sheath-flow gel-capillary array apparatus). *Bunseki*, (1995) 388-390; C.A., 123 (1995) 209477p - a review with 12 refs.
- 786 Kinawi, A., Hecker-Kia, A. and Groitl, M.M.: Further development of flow-through electrophoresis. *Eur. J. Clin. Chem. Clin. Biochem.*, 34 (1996) 49-52.
- 787 Liu, S.Y.: Micro chemical analysis employing flow through detectors. *U.S. US 5,444,807* (Cl. 385-125; G02B6/20), 20 Aug. 1995, US Appl. 38,520, 29 Mar. 1993; 9 p.; C.A., 123 (1995) 217314y.
- 788 Luo, X.Z.: Concentrating electroelution apparatus. *U.S. US 5,439,573* (Cl. 204-182.8; G01N27/26), 08 Aug. 1995, Appl. 180,343, 12 Jan. 1994; 8 pp.; C.A., 123 (1995) 193015y.

- 789 Mizuno, A., Nagamune, T., Yoda, M. and Endo, I.: Electrophoresis apparatus for DNA, RNA, proteins, peptides, surfactants, and carbohydrates. *Jpn. Kokai Tokkyo Koho JP 07,190,990* [95,190,990] (Cl. G01N27/447), 28 Jul. 1995, Appl. 93/328,610, 24 Dec. 1993; 5 p.; C.A., 123 (1995) 328928w.
- 790 Nakamura, S.: Electrophoresis apparatus. *Jpn. Kokai Tokkyo Koho JP 07,239,317* [95,239,317] (Cl. G01N27/447), 12 Sep. 1995, Appl. 94/28,381, 25 Feb. 1994; 4 p.; C.A., 123 (1995) 351438v.
- 791 Rampal, S. and Rampal, J.B.: Capillary electrophoretic system for separation of samples containing both positively and negatively charged components. *U.S. US 5,466,351* (Cl. 204-180.1; G01N27/26), 14 Nov. 1995, Appl. 414,684, 31 Mar. 1995; 8 p.; C.A., 124 (1996) 20644v.
- 792 Sarrine, R.J., Garsee, H.A., Kelley, C.D., Everitt, M.T., Boone, E.W., Guadagno, P.A., Petersen, E.H. and Golias, T.L.: Automatic electrophoresis method and apparatus. *U.S. US 5,460,709* (Cl. 204-299R; G01N27/26), 24 Oct. 1995, US Appl. 79,378, 21 Jun. 1993; 54 pp.; C.A., 124 (1996) 4476m.
- 793 Stevenson, R.: The world of separation science: PITCON® '95. *Int. Lab.*, 25, No. 6 (1995) 8A-8Q.
- 794 Verma, S. and Verma, K.: Multi-purpose electrophoresis apparatus. *U.S. US 5,449,446* (Cl. 204-301; G01N27/26), 12 Sep. 1995, Appl. 208,604, 09 Mar. 1994; 23 p.; C.A., 123 (1995) 245788z.
- 795 Williams, J.G.K.: Sample holder and method for automated high throughput electrophoresis. *PCT Int. Appl. WO 95 20,155* (Cl. G01N27/447), 27 Jul. 1995, US Appl. 183,558, 19 Jan. 1994; 35 p.; C.A., 123 (1995) 217444r.

See also 824, 830, 836, 852, 1409, 1578.

## 3b. Detectors and detection procedures

- 796 Chen, D. and Dovichi, N.J.: Single-molecule detection in capillary electrophoresis: molecular shot noise as a fundamental limit to chemical analysis. *Anal. Chem.*, 68 (1996) 690-696.
- 797 Chen, M.-C. and Huang, H.-J.: An electrochemical cell for end-column amperometric detection in capillary electrophoresis. *Anal. Chem.*, 67 (1995) 4010-4014.
- 798 Delonge, T. and Fouckhardt, H.: Integrated optical detection cell based on Bragg reflecting waveguides. *J. Chromatogr. A*, 716 (1995) 135-139.
- 799 Desnoyers, S., Shah, G.M., Bourassa, S. and Pourier, G.G.: Rapid removal of nonspecific backgrounds in silver-stained polyacrylamide gel. *Anal. Biochem.*, 232 (1995) 138-140.
- 800 Gilman, S.D. and Ewing, A.G.: Post-column derivatization for capillary electrophoresis using naphthalene-2,3-dicarboxaldehyde and 2-mercaptopropanoic acid. *Anal. Methods Instrum.*, 2 (1995) 133-141; C.A., 123 (1995) 280120x.
- 801 Henrion, E. and Bernoth, E.-M.: Optimization of silver staining electrophoretic separation of lipopolysaccharide from *Aeromonas salmonicida*. In: Blobel, H. and Schimmel, D. (Editors), *Tag. Fachgruppe "Bakteriol. Bakt. Krankh."*, Dtsch. Veterinaermed. Ges., Deutsche Veterinaermedizinische Gesellschaft, Giessen, 1994, pp. 170-178; C.A., 123 (1995) 2221335.
- 802 Kawazumi, H., Song, J.M., Inoue, T. and Ogawa, T.: Laser fluorometry using a visible semiconductor laser and an avalanche photodiode for capillary electrophoresis. *Anal. Sci.*, 11 (1995) 587-590; C.A., 123 (1995) 328797c.

- 803 Krstanovic, S. and Reineck, J.: Off column detector for ion separation techniques. *U.S.* US 5,453,170 (Cl. 204-299R; B01D61/42), 26 Sep. 1995, Appl. 312,463, 26 Sep. 1994; 15 p.; C.A., 123 (1995) 357949.
- 804 Li, G., Du, B., Jin, W., Wang, S., Ou, Q. and Yu, W.: (Development of electrochemical detector for high-performance capillary electrophoresis). *Fenxi Huaxue*, 23 (1995) 480-484; C.A., 123 (1995) 217359s.
- 805 Ma, M., Han, H. and Liu, G.: (Laser-induced fluorescence detector - a highly sensitive detector for high-performance liquid chromatography (HPLC) and high performance capillary electrophoresis (HPCE)). *Sepu*, 13 (1995) 257-261; C.A., 123 (1995) 274740h - a review with 48 refs.
- 806 Nouadje, G., Nertz, M., Verdeguer, P. and Couderc, F.: Ball-lens laser-induced fluorescence detector as an easy-to-use highly sensitive detector for capillary electrophoresis. Application to the identification of biogenic amines in dairy products. *J. Chromatogr. A*, 717 (1995) 335-343.
- 807 Park, S. and Lunte, C.E.: A perfluorosulfonated ionomer end-column electrical decoupler for capillary electrophoresis/electrochemical detection. *Anal. Chem.*, 67 (1995) 4366-4370.
- 808 Stone, E.M. and Nichols, B.E.: Device and process for staining electrophoretic gels. *U.S.* US 5,458,749 (Cl. 204-180.1; G01N27/26), 17 Oct. 1995, Appl. 236,967, 02 May 1994; 14 pp.; C.A., 123 (1995) 334336t.
- 809 Watanabe, M., Imasaka, T., Kaneta, T. and Shiga, M.: New fluorescent labeling reagents for capillary electrophoresis based on semiconductor laser fluorescence detection. In: Hatano, H. and Hanai, T. (Editors), *Int. Symp. Chromatogr., 35th Anniv. Res. Group Liq. Chromatogr. Jpn.*, World Scientific, Singapore, 1995, pp. 359-364; C.A., 123 (1995) 280088t.
- 810 Xu, D. and Chen, H.: (Amperometric detection in capillary electrophoresis). *Fenxi Huaxue*, 23 (1995) 1087-1094; C.A., 123 (1995) 305232a - a review with 27 refs.
- 811 Yuan, F.F., Mihrshahi, S. and Fletcher, A.: Chemiluminescent enhanced CD47 detection on Western blotting. *Electrophoresis (Weinheim)*, 17 (1996) 219-220.
- 812 Zhong, M., Zhou, J., Lunte, S.M., Zhao, G., Giolando, D.M. and Kirchhoff, J.R.: Dual-electrode detection for capillary electrophoresis/electrochemistry. *Anal. Chem.*, 68 (1996) 203-207.
- See also 767, 861, 876, 881, 899, 905, 907, 911, 920, 959, 963, 964, 966, 998, 1005, 1017, 1039, 1045, 1057, 1088, 1090, 1284, 1324, 1353, 1378, 1401, 1404, 1423, 1427, 1464, 1545, 1573, 1602.
- 3c. *Stabilization media for electrophoresis*
- 813 Baba, Y., Inoue, H., Tsuhako, M. and Akashi, M.: (Functional polymer for capillary electrophoretic recognition of genetic sequence). *Kuromatogurafi*, 16 (1995) 96-97; C.A., 123 (1995) 247821d.
- 814 Behnke, B., Grom, E. and Bayer, E.: Evaluation of the parameters determining the performance of electrochromatography in packed capillary columns. *J. Chromatogr. A*, 716 (1995) 207-213.
- 815 Chang, H.-T. and Chrambach, A.: Application of gels of 0.5 mm thickness to electrophoresis in the automated HPGE-1000 apparatus: improved resolution. *Electrophoresis (Weinheim)*, 17 (1996) 80-83.
- 816 Charlionet, R., Levasseur, L. and Malandain, J.-J.: Eliciting macroporosity in polyacrylamide and agarose gels with polyethylene glycol. *Electrophoresis (Weinheim)*, 17 (1996) 58-66.
- 817 Engelhorn, S. and Updyke, T.V.: System for pH-neutral longlife precast electrophoresis gel. *PCT Int. Appl. WO 95 27,197* (Cl. G01N27/447), 12 Oct. 1995, US Appl. 221,939, 31 Mar. 1994; 20 pp.; C.A., 124 (1996) 25210k.
- 818 Fang, T.-Y.: Methods for preparing polyacrylamide gels for electrophoretic analysis. *PCT Int. Appl. WO 95 24,640* (Cl. G01N27/26), 14 Sep. 1995, US Appl. 209,632, 09 Mar. 1994; 35 pp.; C.A., 123 (1995) 309897u.
- 819 Fukunaga, N., Kaneko, T. and McCulloch, J.: (Character of chemically bonded phase capillary electrophoresis columns). *Kuromatogurafi*, 16 (1995) 90-93; C.A., 123 (1995) 323088n.
- 820 Okada, J., Mori, M., Takeuchi, T., Nakano, O., Hayashi, S., Asai, Y. and Ozasa, A.: Manufacture of adsorption sheets for analysis of chemical substances. *Jpn. Kokai Tokkyo Koho JP 07,232,060 [95,232,060]* (Cl. B01J20/24) 05 Sep. 1995, JP Appl. 93/263,936, 21 Oct. 1993; 11 p.; C.A., 123 (1995) 328935w.
- 821 Palmer, C.P. and Terabe, S.: (A molecular micelle as a pseudostationary phase for MEKC). *Kuromatogurafi*, 16 (1995) 98-99; C.A., 123 (1995) 323090g.
- 822 Phang, T., Ji, I. and Ji, T.H.: No need of acetic acid for processing polyacrylamide gels. *Anal. Biochem.*, 234 (1996) 96-97.
- 823 Takagi, T.: (Size-dependent separation media: crosslinked polymer-non-crosslinked polymer-oligomer). *Kuromatogurafi*, 16 (1995) 156-157; C.A., 123 (1995) 333938d - a review with 8 refs.
- See also 852, 865, 868, 880, 882, 901, 931, 1084, 1450.
- 3d. *Quantitative analysis*
- See 983, 1570.
- 3e. *Preparative scale electrophoresis*
- 824 Araque, A., Jaugey, J. and Javet, P.: Preparative isoelectric focusing and Joule effect: a purification cell that contains a heat exchanger. *Electrophoresis (Weinheim)*, 17 (1996) 168-172.
- 825 Braun, R., Wagner, H. and Weber, G.: (Preparative free flow electrophoresis. A powerful tool for the isolation of natural substances). *GIT Fachz. Lab.*, 39 (1995) 317-322; C.A., 124 (1996) 4324k.
- 826 Cifuentes, A., Xu, X., Kok, W.T. and Poppe, H.: Optimum conditions for preparative operation of capillary zone electrophoresis. *J. Chromatogr. A*, 716 (1995) 141-156.
- 827 Foret, F., Müller, O., Thorne, J., Götzinger, W. and Karger, B.L.: Analysis of protein fractions by micropreparative capillary isoelectric focusing and matrix-assisted laser desorption time-of-flight mass spectrometry. *J. Chromatogr. A*, 716 (1995) 157-166.
- 828 Shainoff, J.R., Smejkal, G.B., Mitkevich, O. and DiBello, P.M.: Preparative electrophoresis on linear polyacrylamide-agarose composite gels. *Electrophoresis (Weinheim)*, 17 (1996) 179-184.
- See also 1093.

## 3f. Programmed voltage and buffer gradients

- 829 Hjerten, S. and Liao, J.-L.: Electrophoresis in low conductivity buffers. U.S. US 5,464,517 (Cl. 204-183.2; G01N27/26), 7 Nov. 1995, Appl. 280,425, 30 Jan. 1995; 15 p.; C.A., 124 (1996) 44395r.

## 4. SPECIAL TECHNIQUES

## 4a. Automation

- 830 Chiu, R.W., Walker, K.L., Hagen, J.J., Monnig, C.A. and Wilkins, C.L.: Coaxial capillary and conductive capillary interfaces for collection of fractions isolated by capillary electrophoresis. *Anal. Chem.*, 67 (1995) 4190-4196.

See also 781, 795, 815, 843, 1409.

## 4b. Computerization and modelling

- 831 Aldroubi, A., Zakharov, S.F. and Chrambach, A.: A computer program for predicting recovery of SDS-protein in the automated HPGE-1000 apparatus. *Appl. Theor. Electrophor.*, 5 (1995) 31-34; C.A., 123 (1995) 222236d.

- 832 Bellini, T., Degiorgio, V., Mantegazza, F., Marsan, F.A. and Scarneccchia, C.: Electrokinetic properties of colloids of variable charge. I. Electrophoretic and electro-optic characterization. *J. Chem. Phys.*, 103 (1995) 8228-8237; C.A., 124 (1996) 16166y.

- 833 Hinton, D.P. and Johnson, C.S., Jr.: Diffusion coefficients, electrophoretic mobilities, and morphologies of charged phospholipid vesicles by pulsed field gradient NMR and electron microscopy. *J. Colloid Interface Sci.*, 173 (1995) 364-371; C.A., 123 (1995) 297979g.

- 834 Kist, T.B.L.: Solitary waves of molecular distributions in liquid generated by electrophoresis and optical fields. *Phys. Res. Lett.*, 75 (1995) 1210-1213; C.A., 123 (1995) 323378g.

- 835 McGuffin, V.L., Wu, P. and Hopkins, D.L.: Three-dimensional computer simulation of chromatographic and electrophoretic separations. In: Hatano, H. and Hanai, T. (Editors), *Int. Symp. Chromatogr., 35th Anniv. Res. Group Liq. Chromatogr. Jpn.*, World Scientific, Singapore, 1995, pp. 45-69; C.A., 123 (1995) 357661j.

- 836 Rao, R.P. and Ketchum, D.C.: High resolution phosphor screens for advanced CRT display systems. In: Selvajaran, A. (Editor), *Emerging Optoelectron., Technol., Proc. Conf., 2nd*, Tata McGraw-Hill, New Delhi, 1994, pp. 316-318; C.A., 123 (1995) 212925p.

- 837 Sloanecker, P.J., Li, X., Ridgway, T.H. and Dorsey, J.G.: Informational orthogonality of two-dimensional chromatographic separations. *Anal. Chem.*, 68 (1996) 682-689.

- 838 Tietz, D.: Benefits of advanced gel electrophoresis data analysis methods. *Appl. Theor. Electrophor.*, 5 (1995) 107-111; C.A., 124 (1996) 24969c.

See also 796, 864, 890, 892, 893, 895, 903, 910, 1101, 1438, 1596.

## 4c. Combination with other physicochemical techniques, (MS, IR etc.)

- 839 Harrison, D.J., Fluri, K., Fan, Z. and Seiler, K.: Integration of analytical systems incorporating chemical reactions and electrokinetic separation. In: Van den Berg, A. and Bergveld, P. (Editors), *Micro Total Anal. Syst. Proc. µTAS '94 Workshop*, 1st 1994, Kluwer, Dordrecht, 1995, pp. 105-115; C.A., 123 (1995) 274445r.

- 840 Kowalchyk, W.K., Walker, P.A., III and Morris, M.D.: Rapid normal Raman spectroscopy of sub-ppm oxy-anion solutions: the role of electrophoretic preconcentration. *Appl. Spectrosc.*, 49 (1995) 1183-1188; C.A., 123 (1995) 328600h.

- 841 Lane, S.J., Boughtflower, R., Paterson, C. and Underwood, T.: Capillary electrochromatography/mass spectrometry: principles and potential for application in the pharmaceutical industry. *Rapid Commun. Mass Spectrom.*, 9 (1995) 1283-1287; C.A., 123 (1995) 322204k.

- 842 Muddiman, D.C., Rockwood, A.L., Gao, Q., Severs, J.C., Udseth, H.R., Smith, R.D. and Proctor, A.: Application of sequential paired covariance to capillary electrophoresis electrospray ionization time-of-flight mass spectrometry: unraveling the signal from the noise in the electropherogram. *Anal. Chem.*, 67 (1995) 4371-4375.

- 843 Walker, K.L., Chiu, R.W., Monnig, C.A. and Wilkins, C.L.: Offline coupling of capillary electrophoresis and matrix-assisted laser desorption/ionization time-of-flight mass spectrometry. *Anal. Chem.*, 67 (1995) 4197-4204.

See also 756, 827, 871, 891, 894, 958, 974, 986, 1052, 1073, 1337, 1492, 1549, 1592.

## 4d. Affinity electrophoresis

- 844 Chu, Y.-H., Avila, L.Z., Gao, J. and Whitesides, G.M.: Affinity capillary electrophoresis. *Acc. Chem. Res.*, 28 (1995) 461-468; C.A., 123 (1995) 280124b.

- 845 Ensing, K., Oroszlan, P., Paulus, A. and Effenhauser, C.S.: Device and method for combined bioaffinity assay and electrophoretic separation. *Eur. Pat. Appl. EP 671,626 (Cl. G01N33/543)*, 13 Sep. 1995, Appl. 94/810,146, 08 Mar. 1994; 10 pp.; C.A., 123 (1995) 250645e.

- 846 Horvath, Z.S., Gooley, A.A., Wrigley, C.W., Margolis, J. and Williams, K.L.: Preparative affinity membrane electrophoresis. *Electrophoresis (Weinheim)*, 17 (1996) 224-226.

- 847 Saitoh, S., Ikeda, K., Koida, I., Suzuki, Y., Kobayashi, M., Tsubota, A., Arase, Y., Chayama, K., Murashima, N. and Kumada, H.: Diagnosis of hepatocellular carcinoma by concanavalin A affinity electrophoresis of serum alpha-fetoprotein. *Cancer (Philadelphia)*, 76 (1995) 1139-1144; C.A., 123 (1995) 334149j.

See also 1168.

## 4e. Capillary zone electrophoresis and electrokinetic chromatography

- 848 Altria, K.D., Clark, B.J., Filbey, S.D., Kelly, M.A. and Rudd, D.R.: Application of chemometric experimental designs in capillary electrophoresis: a review. *Electrophoresis (Weinheim)*, 16 (1995) 2143-2148 - a review with 32 refs.

- 849 Baba, Y.: (A grounding in chromatography-capillary electrophoresis). *Bunseki*, (1995) 342-349; C.A., 123 (1995) 209476n - a review with 4 refs.
- 850 Baechmann, K.: (Limits and possibilities of capillary electrophoresis). *CLB, Chem. Labor. Biotech.*, 46 (1995) 326-329; C.A., 123 (1995) 238397t - a review with many refs.
- 851 Beckers, J.L.: Steady-state models in electrophoresis: from isotachophoresis to capillary zone electrophoresis. *Electrophoresis (Weinheim)*, 16 (1995) 1987-1998.
- 852 Boughtflower, R.J., Unterwood, T. and Maddin, J.: The production of packed capillaries using a novel pressurised ultrasound device. *Chromatographia*, 41 (1995) 398-402.
- 853 Brechtel, R., Hohmann, W., Rüdiger, H. and Wätzig, H.: Control of the electroosmotic flow by metal-salt-containing buffers. *J. Chromatogr. A*, 716 (1995) 97-105.
- 854 Bretnall, A.E. and Clarke, G.S.: Investigation and optimisation of the use of organic modifiers in micellar electrokinetic chromatography. *J. Chromatogr. A*, 716 (1995) 49-55.
- 855 Cancalon, P.F.: Capillary electrophoresis: a useful technique for food analysis. *Food Technol. (Chicago)*, 49 (1995) 52-58; C.A., 123 (1995) 254732d - a review with 57 refs.
- 856 Chang, H.-T. and Yeung, E.S.: Dynamic control to improve the separation performance in capillary electrophoresis. *Electrophoresis (Weinheim)*, 16 (1995) 2069-2073.
- 857 Chen, F.-T.A. and Pentoney, S.L.: Homogeneous immunoassays and enzyme-based assays of analytes using capillary electrophoresis. *PCT Int. Appl. WO 95 20,161 (Cl. GO1N33/561)*, 27 Jul. 1995, US Appl. 184,791, 21 Jan. 1994; 75 pp.; C.A., 123 (1995) 250697y.
- 858 Chen, N. and Terabe, S.: A quantitative study on the effect of organic modifiers in micellar electrokinetic chromatography. *Electrophoresis (Weinheim)*, 16 (1995) 2100-2103.
- 859 Cifuentes, A. and Poppe, H.: Capillary electrophoresis of peptides using rectangular and cylindrical geometries: a comparative study. *Electrophoresis (Weinheim)*, 16 (1995) 2051-2059.
- 860 Cifuentes, A., Kok, W.T. and Poppe, H.: Capillary electrophoresis using air and helium as cooling fluids. *J. Microcolumn Sep.*, 7 (1995) 365-374; C.A., 123 (1995) 334163j.
- 861 Collet, J. and Gareil, P.: Capillary zone electrophoresis with indirect UV detection applying a UV-absorbing counter ion. *J. Chromatogr. A*, 716 (1995) 115-122.
- 862 Colyer, C.L. and Oldham, K.B.: Emersion peaks in capillary electrophoresis. *J. Chromatogr. A*, 716 (1995) 3-15.
- 863 Corstjens, H., Billiet, H.A.H., Frank, J. and Luyben, K.C.A.M.: Variation of the pH of the background electrolyte due to electrode reactions in capillary electrophoresis: theoretical approach and *in situ* measurement. *Electrophoresis (Weinheim)*, 17 (1996) 137-143.
- 864 Corstjens, H., Oord, A.E.E., Billiet, A.H., Frank, J. and Luyben, K.C.A.M.: Optimization of selectivity in capillary zone electrophoresis and micellar electrokinetic capillary chromatography using the iterative regression strategy. *J. High Resolut. Chromatogr.*, 18 (1995) 551-558.
- 865 Engelhardt, H. and Cuñat-Walter, M.A.: Preparation and stability tests for polyacrylamide-coated capillaries for capillary electrophoresis. *J. Chromatogr. A*, 716 (1995) 27-33.
- 866 Faupel, M.: (Application of capillary electrophoresis to chiral separation-generalities). *Analisis*, 23 (1995) M9-M12; C.A., 123 (1995) 305618f - a review with 51 refs.
- 867 Fridström, A., Markides, K.E. and Lee, M.L.: Micellar electrokinetic capillary chromatography using polymeric hollow fibers. *Chromatographia*, 41 (1995) 295-300.
- 868 Fujimoto, C., Kino, J. and Sawada, H.: Capillary electrochromatography of small molecules in polyacrylamide gels with electroosmotic flow. *J. Chromatogr. A*, 716 (1995) 107-113.
- 869 Gebauer, P., Thormann, W. and Bocek, P.: Sample self-stacking and sample stacking in zone electrophoresis with major sample components of like charge: general model and scheme of possible modes. *Electrophoresis (Weinheim)*, 16 (1995) 2039-2050.
- 870 Guttmann, A., Brunet, S., Jurado, C. and Cooke, N.: Rapid chiral separation methods development by cyclodextrin-mediated capillary electrophoresis for acidic and basic compounds. *Chirality*, 7 (1995) 409-414; C.A., 123 (1995) 296744q.
- 871 Hamdan, M., Zaramella, A. and Curcuruto, O.: Capillary zone electrophoresis/mass spectrometry: analytical need or an option? *Rapid Commun. Mass Spectrom.*, 9 (1995) 1325-1327; C.A., 123 (1995) 300518p.
- 872 Jacquier, J.C. and Desbène, P.L.: Determination of critical micelle concentration by capillary electrophoresis. Theoretical approach and validation. *J. Chromatogr. A*, 718 (1995) 167-175.
- 873 Jung, M., Börnsen, K.O. and Francotte, E.: Dextrin sulfopropyl ether: a novel anionic chiral buffer additive for enantiomer separation by electrokinetic chromatography. *Electrophoresis (Weinheim)*, 17 (1996) 130-136.
- 874 Kabasawa, Y. and Itoi, S.: (Partition electrochromatography). *Kuromatogurafi*, 16 (1995) 168-169; C.A., 123 (1995) 323098r.
- 875 Kasicka, V., Prusik, Z., Gas, B. and Stedry, M.: Contribution of capillary coiling to zone dispersion in capillary zone electrophoresis. *Electrophoresis (Weinheim)*, 16 (1995) 2034-2038.
- 876 Khaled, M.Y.: Selectivity and detection in capillary electrophoresis (micellar electrochromatography, electrochemical detection). Avail. *Univ. Microfilms Int.*, Order No. DA9524786, 1994, 230 p.; C.A., 123 (1995) 274746q.
- 877 Kilar, F. (Editor): *Ninth International Symposium on Capillary Electrophoresis, Budapest, 5-7 October 1994*. In: *J. Chromatogr. A*, Vol. 709, Elsevier, Amsterdam, 1995, 225 pp.; C.A., 123 (1995) 193009z.
- 878 Krivánkova, L., Gebauer, P. and Bocek, P.: Some practical aspects of utilizing the on-line combination of isotachophoresis and capillary zone electrophoresis. *J. Chromatogr. A*, 716 (1995) 35-48.
- 879 Kutter, J. and Welsch, T.: The effect of electroosmotic and hydrodynamic flow profile superposition on band broadening in capillary electrophoresis. *J. High Resolut. Chromatogr.*, 18 (1995) 741-744.
- 880 Liao, J.-L., Abramson, J. and Hjerten, S.: A highly stable methyl cellulose coating for capillary electrophoresis. *J. Capillary Electrophor.*, 2 (1995) 191-196; C.A., 123 (1995) 222127u.
- 881 Liao, S.-Y., Chao, Y.-C. and Whang, C.-W.: Indirect chemiluminescence detection in capillary electrophoresis. *J. High Resolut. Chromatogr.*, 18 (1995) 667-669.
- 882 Lin, B., Xu, X., Luo, G. and Chu, X.: Preparation and characteristics of columns in capillary gel electrophoresis. *Chin. Sci. Bull.*, 40 (1995) 773-777; C.A., 123 (1995) 192779p.

- 883 Lucy, C.A. and Underhill, R.S.: Characterization of the cationic surfactant induced reversal of electroosmotic flow in capillary electrophoresis. *Anal. Chem.*, 68 (1996) 300-305.
- 884 Luo, G. and Wang, Y.: (Principles and application of capillary electrophoresis. I. Introduction to capillary electrophoresis). *Sepu*, 13 (1995) 254-255; *C.A.*, 123 (1995) 274739q - a review with no refs.
- 885 Madabhushi, R.S., Menchen, S.M., Efcavitch, J.W. and Grossman, P.D.: Polymers for separation of biomolecules by capillary electrophoresis. *PCT Int. Appl.* WO 95 16,911 (Cl. G01N27/447), 22 Jun. 1995, US Appl. 170,078, 17 Dec. 1993; 49 pp.; *C.A.*, 123 (1995) 193036f.
- 886 Matsuda, R., Hayashi, Y., Sasaki, K. and Saito, Y.: Deductive prediction of measurement precision and optimization of integration time and wavelength in capillary electrophoresis. *Chromatographia*, 41 (1995) 707-714.
- 887 Mazzeo, J.R., Grover, E.R., Schwartz, M.E., Merion, M. and Petersen, J.S.: Chiral surfactants and method for their use in chiral separations. *PCT Int. Appl.* WO 95 08,529 (Cl. C07C233/47), 30 Mar. 1995, US Appl. 124,681, 20 Sep. 1993; 100 p.; *C.A.*, 123 (1995) 358185u.
- 888 Mechref, Y. and El Rassi, Z.: Capillary enzymophoresis of nucleic acid fragments using coupled capillary electrophoresis and capillary enzyme microreactors having surface-immobilized RNA-modifying enzymes. *Electrophoresis (Weinheim)*, 16 (1995) 2164-2171.
- 889 Moore, A.W., Jr., Jacobson, S.C. and Ramsey, J.M.: Microchip separation of neutral species via micellar electrokinetic capillary chromatography. *Anal. Chem.*, 67 (1995) 4184-4189.
- 890 Mosher, R.A., Zhang, C.-X., Caslavská, J. and Thormann, W.: Dynamic simulator for capillary electrophoresis with *in situ* calculation of electroosmosis. *J. Chromatogr. A*, 716 (1995) 17-26.
- 891 Ozaki, H., Itou, N., Terabe, S., Takada, Y., Sakairi, M. and Koizumi, H.: Micellar electrokinetic chromatography-mass spectrometry using a high-molecular-mass surfactant. On-line coupling with an electrospray ionization interface. *J. Chromatogr. A*, 716 (1995) 69-79.
- 892 Palmer, C.P. and Vandeginste, B.G.M.: Statistical evaluation of various qualitative parameters in capillary electrophoresis. *J. Chromatogr. A*, 718 (1995) 153-165.
- 893 Pyell, U. and Bütehorn, U.: Optimization of resolution in micellar electrokinetic chromatography *via* computer-aided simultaneous variation of concentrations of sodium dodecyl sulfate and urea as modifier. *J. Chromatogr. A*, 716 (1995) 81-95.
- 894 Ramsey, R.S. and McLuckey, S.A.: Capillary electrophoresis/electrospray ionization ion trap mass spectrometry using a sheathless interface. *J. Microcolumn Sep.*, 7 (1995) 461-469; *C.A.*, 124 (1996) 4461c.
- 895 Reijenga, J.C., Martens, J.H.P.A. and Everaerts, F.M.: Training software for electrophoresis. *Electrophoresis (Weinheim)*, 16 (1995) 2008-2015.
- 896 Ross, G.A.: Voltage pre-conditioning technique for optimisation of migration-time reproducibility in capillary electrophoresis. *J. Chromatogr. A*, 718 (1995) 444-447.
- 897 Rundlett, K.L. and Armstrong, D.W.: Examination of the origin, variation, and proper use of expressions for the estimation of association constants by capillary electrophoresis. *J. Chromatogr. A*, 721 (1996) 173-186.
- 898 Schure, M.R. and Murphy, R.E.: Viscous effects in capillary electrophoresis: theory and experiment. *Electrophoresis (Weinheim)*, 16 (1995) 2074-2085.
- 899 Shamsi, S.A.: Reversed phase/ion chromatography and capillary electrophoresis of ion compounds with indirect detection (photometric detection, naphthalenesulphonate). Avail. *Univ. Microfilms Int.*, Order No. DA9530111, 1995, 304 p.; *C.A.*, 123 (1995) 358089r.
- 900 Shi, Y.: New electrolyte systems for capillary zone electrophoresis of metal cations and non-ionic organic compounds. Avail. *Univ. Microfilms, Int.*, Order No. DA9531788, 1995, 135 p.; *C.A.*, 124 (1996) 20482r.
- 901 Shieh, C.-H.: Coated capillary columns and electrophoretic separation methods for their use. *PCT Int. Appl.* WO 95 20,157 (Cl. G01N27/447), 27 Jul. 1995, US Appl. 186,736, 25 Jan. 1994; 37 pp.; *C.A.*, 123 (1995) 250638e.
- 902 Shihabi, Z.K. and Hinsdale, M.E.: Some variables affecting reproducibility in capillary electrophoresis. *Electrophoresis (Weinheim)*, 16 (1995) 2159-2163.
- 903 Slais, K.: Model of isotachophoresis (displacement electrophoresis) in tapered capillaries. *Electrophoresis (Weinheim)*, 16 (1995) 2060-2068.
- 904 Smisek, D.L.: Capillary electrophoresis with polymeric separation media: considerations for theory. *Electrophoresis (Weinheim)*, 16 (1995) 2094-2099.
- 905 Soper, S.A., Legendre, B.L., Jr. and Williams, D.C.: On-line fluorescence lifetime determinations in capillary electrophoresis. *Anal. Chem.*, 67 (1995) 4358-4365.
- 906 Stedy, M., Gas, B. and Kenndler, E.: Dynamics of peak dispersion in capillary zone electrophoresis including wall adsorption: II. Exact analysis of unsteady linear adsorptive dispersion. *Electrophoresis (Weinheim)*, 16 (1995) 2027-2033.
- 907 Sweedler, J.V., Timperman, A., Oldenburg, K., Cruz, L.A., Shippy, S. and Jankowski, J.A.: Charge-coupled device based fluorescence detection in capillary electrophoresis. *Anal. Spectrosc. Libr.*, 6(Spectrophotometry, Luminescence and Colour; Science & Compliance) (1995) 385-398; *C.A.*, 123 (1995) 250264e.
- 908 Tanaka, N., Fukutome, T., Hosoya, K., Kimata, K. and Araki, T.: Polymer-supported pseudo-stationary phase for electrokinetic chromatography. Electrokinetic chromatography in a full range of methanol-water mixtures with alkylated starburst dendrimers. *J. Chromatogr. A*, 716 (1995) 57-67.
- 909 Terabe, S.: (Capillary electrophoresis; fundamentals). *Bunseki*, (1994) 281-289; *C.A.*, 123 (1995) 209479r - a review with 82 refs.
- 910 Thormann, W., Caslavská, J. and Mosher, R.A.: Impact of electroosmosis on isotachophoresis in open-tubular fused-silica capillaries: analysis of the evolution of a stationary steady-state zone structure by computer simulation and experimental validation. *Electrophoresis (Weinheim)*, 16 (1995) 2016-2026.
- 911 Tong, W. and Yeung, E.S.: Simple double-beam absorption detection systems for capillary electrophoresis based on diode lasers and light-emitting diodes. *J. Chromatogr. A*, 718 (1995) 177-185.
- 912 Vissers, J.P.C., Claessens, H.A. and Coufal, P.: Calculation of retention factors in capillary electrochromatography from chromatographic and electrophoretic data. *J. High Resolut. Chromatogr.*, 18 (1995) 540-544.

- 913 Völkel, A.R. and Noolandi, J.: Electrophoresis between sieving and raptation: an investigation of the role of shape fluctuations in electrophoresis. *Electrophoresis (Weinheim)*, 16 (1995) 2086-2093.
- 914 Wang, Y. and Luo, G.: (Application and advances of capillary electrophoresis in chiral separation). *Fenxi Huaxue*, 23 (1995) 850-857; C.A., 123 (1995) 245672g - a review with 74 refs.
- 915 Ward, T.J. and Ward, K.D.: Solubilization in micellar separations. *Surfactant Sci.*, 55 (1995) 517-540; C.A., 124 (1996) 11382f - a review with 115 refs.
- 916 Wu, H., Guan, F. and Luo, Y.: (On-column sample stacking of weakly acidic compounds in micellar electrokinetic chromatography). *Sepu*, 13 (1995) 390-394; C.A., 123 (1995) 296707e.
- 917 Xu, X., Luo, G., Chu, X. and Lin, B.: Electrokinetic injection in capillary gel electrophoresis. *Chin. Sci. Bull.*, 40 (1995) 482-487; C.A., 123 (1995) 280126d.
- 918 Yamaguchi, M. and Izumi, T.: Buffer solution for capillary electrophoresis. *Jpn. Kokai Tokkyo Koho JP 07,113,785 [95,113,785] (Cl. G01N27/447)*, 02 May 1995, Appl. 93/258,120, 15 Oct. 1993; 6 p.; C.A., 123 (1995) 217445s.
- 919 Yu, L. and Davis, J.M.: Study of high-field dispersion in micellar electrokinetic chromatography. *Electrophoresis (Weinheim)*, 16 (1995) 2104-2120.
- 920 Zhu, R. and Kok, W.T.: Post-column reaction system for fluorescence detection in capillary electrophoresis. *J. Chromatogr. A*, 716 (1995) 123-133.
- See also\* 756, 767, 768, 772, 775, 776, 783, 785, 786, 787, 791, 793, 796, 797, 798, 800, 802, 804, 805, 806, 807, 809, 810, 812, 813, 814, 819, 821, 823, 826, 827, 829, 830, 837, 840, 841, 842, 843, 844, 921, 924, 925, 926, 927, 928, 929, 930, 932, 933, 934, 935, 937, 938, 939, 940, 941, 942, 943, 944, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 970, 971, 972, 973, 974, 975, 976, 977, 979, 983, 985, 986, 987, 988, 992, 996, 997, 998, 999, 1000, 1001, 1002, 1003, 1004, 1005, 1012, 1014, 1023, 1024, 1025, 1026, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1049, 1050, 1051, 1052, 1053, 1056, 1057, 1061, 1063, 1067, 1073, 1080, 1082, 1084, 1089, 1090, 1091, 1092, 1114, 1144, 1145, 1155, 1156, 1158, 1160, 1164, 1172, 1199, 1200, 1203, 1206, 1262, 1284, 1293, 1314, 1315, 1324, 1325, 1326, 1329, 1330, 1333, 1334, 1335, 1336, 1384, 1385, 1387, 1389, 1399, 1400, 1403, 1405, 1409, 1417, 1423, 1427, 1441, 1445, 1449, 1460, 1461, 1465, 1467, 1474, 1478, 1479, 1485, 1488, 1492, 1493, 1494, 1495, 1496, 1497, 1499, 1500, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1527, 1528, 1529, 1531, 1532, 1533, 1534, 1535, 1537, 1538, 1539, 1541, 1542, 1543, 1544, 1545, 1546, 1548, 1549, 1550, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1563, 1564, 1566, 1567, 1568, 1570, 1571, 1572, 1573, 1574, 1581, 1588, 1589, 1590, 1591, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610.
- 4f. *Isotachophoresis*
- 921 Ermakov, S.V., Zhukov, M.Y., Capelli, L. and Righetti, P.G.: On the measurements of electrophoretic mobilities by means of capillary isotachophoresis at a constant voltage. *Electrophoresis (Weinheim)*, 16 (1995) 2149-2158.
- 922 Gebauer, P. and Bocek, P.: Theory of zone separation in isotachophoresis: a diffusional approach. *Electrophoresis (Weinheim)*, 16 (1995) 1999-2007.
- See also 756, 763, 777, 782, 878, 976, 1337, 1498, 1526, 1536, 1592.
- 4g. *Enantiomers, separation*
- 923 Armstrong, D.: Macroyclic antibiotics as separation agents. *PCT Int. Appl. WO 95 22,390 (Cl. B01D15/08)*, 24 Aug. 1995, US Appl. 198,409, 22 Feb. 1994; 71 pp.; C.A., 124 (1996) 28995f.
- 924 Desiderio, C. and Fanali, S.: Use of negatively charged sulfobutyl ether- $\beta$ -cyclodextrin for enantiomeric separation by capillary electrophoresis. *J. Chromatogr. A*, 716 (1995) 183-196.
- 925 Gao, D., Li, Z. and Zhou, Q.: (Separation of chiral compounds by high performance capillary electrophoresis). *Huaxue Tongbao*, (1995) 22-25; C.A., 123 (1995) 358063c - a review with 6 refs.
- 926 Hong, S. and Lee, C.S.: Electroosmotic control of chiral separation in capillary zone electrophoresis. *Electrophoresis (Weinheim)*, 16 (1995) 2132-2136.
- 927 Nishi, H.: Separation of binaphthyl enantiomers by capillary zone electrophoresis and electrokinetic chromatography. *J. High Resolut. Chromatogr.*, 18 (1995) 659-664.
- 928 Otsuka, K., Kawakami, H., Tamaki, W. and Terabe, S.: Optical resolution of amino acid derivatives by micellar electrokinetic chromatography with sodium N-tetradecanoyl-L-glutamate. *J. Chromatogr. A*, 716 (1995) 319-322.
- 929 Schützner, W., Fanali, S., Rizzi, A. and Kenndler, E.: Separation of diastereomers by capillary zone electrophoresis in free solution with polymer additive and organic solvent component. *J. Chromatogr. A*, 719 (1996) 411-420.
- 930 Schützner, W., Fanali, S., Rizzo, A. and Kenndler, E.: Separation of diastereomers by capillary zone electrophoresis with polymer additives: effect of polymer type and chain length. *Anal. Chem.*, 67 (1995) 3866-3870.
- 931 Steinkamp-Zucht, A. and Fahrig, R.: Monitoring of induced chromosomal aberrations in *S. cerevisiae* in agarose gels by pulsed field gel electrophoresis. *Mutat. Res.*, 335 (1995) 275-283; C.A., 124 (1996) 23707d.

\* The number of cross references in this section reflects the exponential growth of capillary electrophoretic applications. This section will be rearranged from January 1st 1997.

- 932 Ward, T.J., Dann, III, C. and Blaylock, A.: Enantiomeric resolution using the macrocyclic antibiotics rifamycin B and rifamycin SV as chiral selectors for capillary electrophoresis. *J. Chromatogr. A*, 715 (1995) 337-344.
- 933 Weseloh, G., Wolf, C. and Koenig, W.A.: A new application of capillary zone electrophoresis: determination of energy barriers of configurationally labile chiral compounds. *Angew. Chem., Int. (Ed. Engl.)*, 34 (1995) 1635-1636; C.A., 123 (1995) 313452n.
- 934 Williams, R.L. and Vigh, G.: Buffer effects in the desionoselective/ionselective/duselective separation selectivity model-assisted optimization of the capillary electrophoretic separation of enantiomers. I. Low-pH phosphate buffers. *J. Chromatogr. A*, 716 (1995) 197-205.
- 935 Wren, S.A.C.: Chiral separation in capillary electrophoresis. *Electrophoresis (Weinheim)*, 16 (1995) 2127-2131.

See also 767, 866, 870, 873, 887, 914, 939, 961, 1026, 1036, 1039, 1042, 1043, 1051, 1292, 1518, 1521, 1524, 1525, 1529, 1531, 1533, 1534, 1535, 1537, 1539, 1541, 1543, 1553, 1554.

#### 4h. Two dimensional electrophoresis

See 837, 1086, 1094, 1099, 1101, 1112, 1121, 1125, 1126, 1135, 1138, 1141, 1168, 1176, 1180, 1194, 1207, 1213, 1214, 1307, 1316, 1439, 1562.

#### 4i. Other special techniques

936 Theos, C.W. and Clark, W.M.: Electroextraction: two-phase electrophoresis. *Appl. Biochem. Biotechnol.*, 54 (1995) 143-157; C.A., 123 (1995) 280129g.

See also 854, 888, 1034, 1061.

### 5. HYDROCARBONS AND HALOGEN DERIVATIVES

#### 5b. Cyclic hydrocarbons, fullerenes

937 Brown, R.S., Luong, J.H.T., Szolar, O.H.J., Halasz, A. and Hawari, J.: Cyclodextrin-modified capillary electrophoresis: determination of polycyclic aromatic hydrocarbons in contaminated soils. *Anal. Chem.*, 68 (1996) 287-292.

938 Brüggemann, O. and Freitag, R.: Determination of polycyclic aromatic hydrocarbons in soil samples by micellar electrokinetic capillary chromatography with photodiode-array detection. *J. Chromatogr. A*, 717 (1995) 309-324.

939 Castelnovo, P. and Albanesi, C.: Determination of the enantiomeric purity of dihydroxy- and dimethoxy-2-aminotetralins by high-performance capillary electrophoresis with cyclodextrins as chiral selector. *Chirality*, 7 (1995) 459-468; C.A., 123 (1995) 350473r.

See also 908, 1334.

### 6. ALCOHOLS

See 967.

### 7. PHENOLS

- 940 Garcia-Viguera, C. and Bridle, P.: Analysis of non-colored phenolic compounds in red wines. A comparison of high-performance liquid chromatography and capillary zone electrophoresis. *Food Chem.*, 54 (1995) 349-352; C.A., 123 (1995) 312418u.
- 941 Gil, M.I., Garcia-Viguera, C., Bridle, P. and Thomas-Barberan, F.A.: Analysis of phenolic compounds in Spanish red wines by capillary zone electrophoresis. *Z. Lebensm.-Unters. Forsch.*, 200 (1995) 278-281; C.A., 123 (1995) 226228a.
- 942 Lin, C.-e., Lin, W.-c. and Chiou, W.-c.: Migration behavior and optimization of selectivity of dichlorophenols in capillary zone electrophoresis. In: Hatano, H. and Hanai, T. (Editors), *Int. Symp. Chromatogr., 35th Anniv. Res. Group Liq. Chromatogr. Jpn.*, World Scientific, Singapore, 1995, pp. 433-441; C.A., 124 (1996) 44365f.
- 943 Lin, C.-E., Lin, W.-C. and Chiou, W.-C.: Migration behaviour and selectivity of dichlorophenols in micellar electrokinetic capillary chromatography. Influence of micelle concentration and buffer pH. *J. Chromatogr. A*, 722 (1996) 333-343.
- 944 Morin, P.: Capillary electrophoresis as an alternative to HPLC for the separation of polyphenols. *Colloq.-Inst. Natl. Rech. Agron.*, 69(Polyphenols 94) (1995) 439-440; C.A., 123 (1995) 250234v - a review with 6 refs.
- 945 Sandra, P.: Electrodriven separations: possibilities for analyzing phenols and polyphenols. *Colloq.-Inst. Natl. Rech. Agron.*, 69(Polyphenols 94) (1995) 143-151; C.A., 123 (1995) 250601n.
- 946 Tomas-Barberan, F.A., Ferreres, F., Gil, M.I., Garcia-Viguera, C. and Tomas-Lorente, F.: Analysis of honey phenolic compounds by CE and HPLC. Its application to honey characterization. *Colloq.-Inst. Natl. Rech. Agron.*, 69(Polyphenols 94) (1995) 273-274; C.A., 123 (1995) 254852t.
- 947 Zemann, A.J.: Separation of methyl phenols by capillary electrophoresis with mixed organic solvent electrolyte systems. *J. Capillary Electrophor.*, 2 (1995) 131-136; C.A., 123 (1995) 190616j.

See also 867, 927, 1029, 1574.

### 8. SUBSTANCES CONTAINING HETEROCYCLIC OXYGEN

#### 8a. Flavonoids

- 948 De Simon, B.F., Hernandez, T. and Estrella, I.: Influence of temperature and pH on flavonoid separation by capillary electrophoresis. *Colloq.-Inst. Natl. Rech. Agron.*, 69(Polyphenols 94) (1995) 435-436; C.A., 123 (1995) 250478c.
- 949 Fernandez de Simon, B., Estrella, I. and Hernandez, T.: Flavonoid separation by capillary electrophoresis. Effect of temperature and pH. *Chromatographia*, 41 (1995) 389-392.

950 Gil, M.I., Ferreres, F. and Tomás-Barberán, F.A.: Micellar electrokinetic capillary chromatography of methylated flavone aglycones. *J. Liq. Chromatogr.*, 18 (1995) 3007-3019.

8b. *Aflatoxins and other mycotoxins*

951 Böhls, B., Seidel, V. and Lindner, W.: Analysis of selected mycotoxins by capillary electrophoresis. *Chromatographia*, 41 (1995) 631-637.

952 Nielsen, M.S., Nielsen, P.V. and Frisvad, J.C.: Micellar electrokinetic capillary chromatography of fungal metabolites. Resolution optimized by experimental design. *J. Chromatogr. A*, 721 (1996) 337-344.

953 Yomota, C., Yoshii, Y., Takahata, T. and Okada, S.: Separation of B-3 monodesamidoinsulin from human insulin by high-performance liquid chromatography under alkaline conditions. *J. Chromatogr. A*, 721 (1996) 89-96.

8c. *Other compounds with heterocyclic oxygen (incl. tannins)*

See 1546.

10. CARBOHYDRATES

10a. *Mono and oligosaccharides. Structural studies*

954 Chang, L., Guo, Q., Yu, Z., Chen, Y. and Zhu, A.: High-performance capillary electrophoresis of reducing oligosaccharides as their ethyl *p*-aminobenzoate derivatives. In: *Int. Symp. Bioanal. Chem., Proc., 1st 1995*, Chinese Chemical Society, Beijing, 1995, pp. 142-143; *C.A.*, 123 (1995) 334148h.

955 Chiesa, C., Oefner, P.J., Zieske, L.R. and O'Neill, R.A.: Micellar electrokinetic chromatography of monosaccharides derivatized with 1-phenyl-3-methyl-2-pyrazolin-5-one. *J. Capillary Electrophor.*, 2 (1995) 175-183; *C.A.*, 123 (1995) 358087p.

956 Frias, J., Price, K.R., Fenwick, G.R., Hedley, C.L., Sørensen, H. and Vidal-Valverde, C.: Improved method for the analysis of  $\alpha$ -galactosides in pea seeds by capillary zone electrophoresis. Comparison with high-performance liquid chromatography-triple-pulsed amperometric detection. *J. Chromatogr. A*, 719 (1996) 213-219.

957 Guttman, A., Chen, F.-T.A., Evangelista, R.A. and Cooke, N.: High-resolution capillary electrophoresis of reducing oligosaccharides labeled with 1-aminopyran-3,6,8-trisulfonate. *Anal. Biochem.*, 233 (1996) 234-242.

958 Harvey, D.J.: Matrix-assisted laser desorption/ionisation mass spectrometry of oligosaccharides and glycoconjugates. *J. Chromatogr. A*, 720 (1996) 429-446 - a review with 64 refs.

959 Hase, S.: Precolumn derivatization for chromatographic and electrophoretic analyses of carbohydrates. *J. Chromatogr. A*, 720 (1996) 173-182 - a review with 89 refs.

960 Honda, S.: Separation of neutral carbohydrates by capillary electrophoresis. *J. Chromatogr. A*, 720 (1996) 337-351 - a review with 44 refs.

961 Honda, S., Kotani, M., Miyoshi, A., Taga, A. and Grover, E.E.: (Separation of carbohydrate stereoisomers by capillary electrophoresis). *Kuromatogurafu*, 16 (1995) 88-89; *C.A.*, 124 (1996) 20617p.

962 Klockow, A., Amadò, R., Widmer, H.M. and Paulus, A.: Separation of 8-aminonaphthalene-1,3,6-trisulfonic acid-labelled neutral and sialylated N-linked complex oligosaccharides by capillary electrophoresis. *J. Chromatogr. A*, 716 (1995) 241-257.

963 Klockow, A., Amadò, R., Widmer, H.M. and Paulus, A.: The influence of buffer composition on separation efficiency and resolution in capillary electrophoresis of 8-aminonaphthalene-1,3,6-trisulfonic acid labeled monosaccharides and complex carbohydrates. *Electrophoresis (Weinheim)*, 17 (1996) 110-119.

964 Le, X., Scaman, C., Zhang, Y., Zhang, J., Dovichi, N.J., Hindsgaul, O. and Palcic, M.M.: Analysis by capillary electrophoresis-laser-induced fluorescence detection of oligosaccharides produced from enzyme reactions. *J. Chromatogr. A*, 716 (1995) 215-220.

965 Linhardt, R.J. and Pervin, A.: Separation of negatively charged carbohydrates by capillary electrophoresis. *J. Chromatogr. A*, 720 (1996) 323-335 - a review with 67 refs.

966 Paulus, A. and Klockow, A.: Detection of carbohydrates in capillary electrophoresis. *J. Chromatogr. A*, 720 (1996) 353-376 - a review with 88 refs.

967 Ren, J., Deng, Y. and Cheng, J.: (Separation of monosaccharides and polyols in arsenite buffer by capillary electrophoresis with laser interference refractive index detection). *Sepu*, 13 (1995) 244-246; *C.A.*, 123 (1995) 328839t.

968 Ren, J., Li, B., Deng, Y. and Cheng, J.: (Determination of sucrose in beverages by capillary electrophoresis with laser interference refractive index detection). *Fenxi Huaxue*, 23 (1995) 1040-1042; *C.A.*, 123 (1995) 283879n.

969 Starr, C.M., Masada, R.I., Hague, C., Skop, E. and Klock, J.C.: Fluorophore-assisted carbohydrate electrophoresis in the separation, analysis, and sequencing of carbohydrates. *J. Chromatogr. A*, 720 (1996) 295-321 - a review with 42 refs.

970 Sudor, J. and Novotny, M.: End-label free-solution capillary electrophoresis of highly charged oligosaccharides. *Anal. Chem.*, 67 (1995) 4205-4209.

971 Xu, X., Kok, W.T. and Poppe, H.: Sensitive determination of sugars by capillary zone electrophoresis with indirect UV detection under highly alkaline conditions. *J. Chromatogr. A*, 716 (1995) 231-240.

972 Zhang, Y., Arriaga, E., Diedrich, P., Hindsgaul, O. and Dovichi, N.J.: Nanomolar determination of aminated sugars by capillary electrophoresis. *J. Chromatogr. A*, 716 (1995) 221-229.

973 Zieske, L.R., Fu, D., Khan, S.H. and O'Neill, R.A.: Multi-dimensional mapping of pyridylamine-labeled N-linked oligosaccharides by capillary electrophoresis. *J. Chromatogr. A*, 720 (1996) 395-407.

See also 789, 974.

10b. *Polysaccharides, mucopolysaccharides, lipopolysaccharides*

974 Kelly, J., Masoud, H., Perry, M.B., Richards, J.C. and Thibault, P.: Separation and characterization of O-deacetyl lipooligosaccharides and glycans derived from *Moraxella catarrhalis* using capillary electrophoresis electrospray mass spectrometry and tandem mass spectrometry. *Anal. Biochem.*, 233 (1996) 15-30.

- 975 Kitagawa, H., Kinoshita, A. and Sugahara, K.: Microanalysis of glycosaminoglycan-derived disaccharides labeled with the fluorophore 2-aminoacridone by capillary electrophoresis and high-performance liquid chromatography. *Anal. Biochem.*, 232 (1995) 114-121.
- 976 Mala, Z., Krivanova, L. and Bocek, P.: Analysis of heparin-like pharmaceuticals by capillary zone electrophoresis and isotachophoresis. *Electrophoresis (Weinheim)*, 17 (1996) 125-129.
- 977 Malsch, R., Harenberg, J. and Heene, D.L.: High-resolution capillary electrophoresis and polyacrylamide gel electrophoresis of heparins. *J. Chromatogr. A*, 716 (1995) 259-268.
- 978 Tozawa, T., Ishii, K. and Moriyama, T.: Electrophoretic analysis of hydroxyethyl starch-induced macroamylasemia. *Seibutsu Butsuri Kagaku*, 39 (1995) 289-295; C.A., 123 (1995) 275038x.
- See also 958, 965, 966, 985.
- 10c. *Glycoproteins and their constituents*
- 979 Apffel, A., Chakel, J., Udiavar, S., Hancock, W.S., Souders, C. and Pungor, E., Jr.: Application of capillary electrophoresis, high-performance liquid chromatography, on-line electrospray mass spectrometry and matrix-assisted laser desorption ionization-time of flight mass spectrometry to the characterization of single-chain plasminogen activator. *J. Chromatogr. A*, 717 (1995) 41-60.
- 980 Carpenter, G.H., Proctor, G.B., Pankhurst, C.L., Linden, R.W., Shori, D.K. and Zhang, X.S.: Glycoproteins in human parotid saliva assessed by lectin probes after resolution by sodium dodecyl sulphate-polyacrylamide gel electrophoresis. *Electrophoresis (Weinheim)*, 17 (1996) 91-97.
- 981 Dahlgren, C., Carlsson, S.R., Karlsson, A., Lundqvist, H. and Sjölin, C.: The lysosomal membrane glycoproteins Lamp-1 and Lamp-2 are present in mobilized organella, but are absent from the azurophil granules of human neutrophils. *Biochem. J.*, 311 (1995) 667-674.
- 982 Harvey, P.R.C., Upadhyay, G.A. and Strasberg, S.M.: Cholesterol microcrystals associated with concanavalin A-binding glycoproteins contribute artifactually to nucleating activity assays. *J. Lipid Res.*, 36 (1995) 2661-2669.
- 983 Heegaard, N.H.H., Mortensen, H.D. and Roepstorff, P.: Demonstration of a heparin-binding site in serum amyloid P component using affinity capillary electrophoresis as an adjunct technique. *J. Chromatogr. A*, 717 (1995) 83-90.
- 984 Islam, K.N., Takahashi, M., Higashiyama, S., Myint, T., Uozumi, N., Kayanoki, Y., Kaneto, H., Kosaka, H. and Taniguchi, N.: Fragmentation of ceruloplasmin following non-enzymatic glycation reaction. *J. Biochem. (Tokyo)*, 118 (1995) 1054-1060.
- 985 Kakehi, K. and Honda, S.: Analysis of glycoproteins, glycopeptides and glycoprotein-derived oligosaccharides by high-performance capillary electrophoresis. *J. Chromatogr. A*, 720 (1996) 377-393 - a review with 48 refs.
- 986 Kelly, J.F., Locke, S.J., Ramaley, L. and Thibault, P.: Development of electrophoretic conditions for the characterization of protein glycoforms by capillary electrophoresis-electrospray mass spectrometry. *J. Chromatogr. A*, 720 (1996) 409-427.
- 987 Legaz, M.E. and Pedrosa, M.M.: Effect of polyamines on the separation of ovalbumin glycoforms by capillary electrophoresis. *J. Chromatogr. A*, 719 (1996) 159-170.
- 988 Moorhouse, K.G., Eusebio, C.A., Hunt, G. and Chen, A.B.: Rapid one-step capillary isoelectric focusing method to monitor charged glycoforms of recombinant human tissue-type plasminogen activator. *J. Chromatogr. A*, 717 (1995) 61-69.
- 989 O'Neill, R.A.: Enzymatic release of oligosaccharides from glycoproteins for chromatographic and electrophoretic analysis. *J. Chromatogr. A*, 720 (1996) 201-215 - a review with 101 refs.
- 990 Preobrazhensky, A.A., Voronina, A.S., Kaliberda, E.N. and Vovk, T.S.: (Ontogenetic expression of neurochordin D, a specific glycoprotein of human brain). *Biokhimiya (Moscow)*, 60 (1995) 1838-1843.
- 991 Prutskova, L.N.: Method of determining glycoproteins and proteins of blood serum. *U.S.S.R. SU 1,827,635* (Cl. G01N33/68), 15 Jul. 1993, Appl. 4,810,702, 05 Apr. 1990; C.A., 123 (1995) 193038h.
- 992 Yim, K., Abrams, J. and Hsu, A.: Capillary zone electrophoretic resolution of recombinant human bone morphogenetic protein 2 glycoforms. An investigation into the separation mechanisms for an exquisite separation. *J. Chromatogr. A*, 716 (1995) 401-412.
- 993 Zborovskij, A.B., Besedin, A.G. and Logutenkov, Yu.: Method of electrophoretic determination of seromucoid fractions in blood serum. *U.S.S.R. SU 1,827,636* (Cl. G01N33/68), 15 Jul. 1993, Appl. 4,815,540, 16 Apr. 1990; C.A., 123 (1995) 193037g.
- 994 Zhang, W.-M., Leinonen, J., Kalkkinen, N., Dowell, B. and Stenman, U.-H.: Purification and characterization of different molecular forms of prostate-specific antigen in human seminal fluid. *Clin. Chem. (Washington)*, 41 (1995) 1567-1573.
- 995 Zhu, Q. and Bhavanandan, V.P.: Analysis of serine/threonine-linked oligosaccharides derived by alkaline-borohydride treatment of mucin glycoproteins electroblotted onto membranes: comparison of the saccharide profiles of the 390 kDa and 350 kDa forms of epitectin. *Glycoconjugate J.*, 12 (1995) 639-644; C.A., 123 (1995) 280142f.
- See also 1074, 1234, 1393.
11. ORGANIC ACIDS AND LIPIDS
- 11a. *Organic acids and simple esters*
- 996 Boden, J., Darius, M. and Bächmann, K.: Determination of inorganic and small organic anions in pure boric acid using capillary zone electrophoresis. *J. Chromatogr. A*, 716 (1995) 311-317.
- 997 Chiari, M. and Kenndler, E.: Capillary zone electrophoresis in organic solvents: separation of anions in methanolic buffer solutions. *J. Chromatogr. A*, 716 (1995) 303-309.
- 998 Desbène, A.M., Morin, C.J., Mofaddel, N.L. and Grout, R.S.: Utilization of fluorescein sodium salt in laser-induced indirect fluorimetric detection. II. Application to organic anions. *J. Chromatogr. A*, 716 (1995) 279-290.
- 999 Dolník, V. and Dolníková, J.: Capillary zone electrophoresis of organic acids in serum of critically ill children. *J. Chromatogr. A*, 716 (1995) 269-277.
- 1000 Guan, F., Wu, H. and Luo, Y.: Sensitive and selective method for the determination of sodium monofluoroacetate by capillary zone electrophoresis. *J. Chromatogr. A*, 719 (1996) 421-426.

- 1001 Jia, L., Zhang, H.X., Kou, X.L. and Hui, Z.D.: Separation and determination of 10-hydroxy-2-decenoic acid in royal jelly by capillary electrophoresis. *Chromatographia*, 41 (1995) 605-609.
- 1002 Lee, Y.J., Price, W.E. and Sheil, M.M.: Effect of organic solvent on the separation of benzoic acids by capillary electrophoresis. *Analyst (Cambridge)*, 120 (1995) 2689-2694.
- 1003 Schäffer, S., Gareil, P., Carpot, L. and Dezael, C.: Capillary electrophoretic determination of degradation products of nitrilotriacetic acid used as a complexing agent in a desulphurization process. *J. Chromatogr. A*, 717 (1995) 351-362.
- 1004 Schrickx, J.M., Raedts, M.J.H., Stouthamer, A.H. and van Verseveld, H.W.: Organic acid production by *Aspergillus niger* in recycling culture analyzed by capillary electrophoresis. *Anal. Biochem.*, 231 (1995) 175-181.
- 1005 Wu, C.H., Lo, Y.S., Lee, Y.-H. and Lin, T.-I.: Capillary electrophoretic determination of organic acids with indirect detection. *J. Chromatogr. A*, 716 (1995) 291-301.

See also 814, 878, 927, 1040, 1314, 1557, 1602.

#### 11c. Lipids and their constituents

- 1006 Al-Othman, M. and Al-Saum, R.M.: Correlation between gel electrophoretic profile of bacterial lipopolysaccharide and its toxicity. *Arab. Gulf J. Sci. Res.*, 13 (1995) 163-171; C.A., 123 (1995) 220423p.
- 1007 Sviridov, D. and Fidge, N.: Efflux of intracellular versus plasma membrane cholesterol in HepG2 cells: different availability and regulation by apolipoprotein A-I. *J. Lipid Res.*, 36 (1995) 1887-1896.

See also 801.

#### 11d. Lipoproteins and their constituents

- 1008 Bernini, F., Calabresi, L., Bonfadini, G. and Franceschini, G.: The molecular structure of apolipoprotein A-II modulates the capacity of HDL to promote cell cholesterol efflux. *Biochim. Biophys. Acta*, 1299 (1996) 103-109.
- 1009 Chappay, B., Myara, I., Benoit, M.-O., Mazière, C., Mazière, J.-C. and Moatti, N.: Characteristics of ten charge-differing subfractions isolated from human native low-density lipoproteins (LDL). No evidence of peroxidative modifications. *Biochim. Biophys. Acta*, 1259 (1995) 261-270.
- 1010 Christison, J.K., Rye, K.A. and Stocker, R.: Exchange of oxidized cholestrylo linoleate between LDL and HDL mediated by cholestrylo ester transfer protein. *J. Lipid Res.*, 36 (1995) 2017-2026.
- 1011 Furbee, J.W., Jr. and Fless, G.M.: Evaluation of common electrophoretic methods in determining the molecular weight of apolipoprotein(a) polymorphs. *Anal. Biochem.*, 234 (1996) 66-73.
- 1012 Hu, A.Z., Cruzado, I.D., Hill, J.W., McNeal, C.J. and Macfarlane, R.D.: Characterization of lipoprotein a by capillary zone electrophoresis. *J. Chromatogr. A*, 717 (1995) 33-39.
- 1013 Hulea, S.A., Wasowicz, E. and Kummerow, F.A.: Inhibition of metal-catalyzed oxidation of low-density lipoprotein by free and albumin-bound bilirubin. *Biochim. Biophys. Acta*, 1259 (1995) 29-38.

- 1014 Liebich, H.M., Lehmann, R., Weiler, A.E., Grübler, G. and Voelter, W.: Capillary electrophoresis, a rapid and sensitive method for routine analysis of apolipoprotein A-I in clinical samples. *J. Chromatogr. A*, 717 (1995) 25-31.
- 1015 Lipton, B.A., Parthasarathy, S., Ord, V.A., Clinton, S.K., Libby, P. and Rosenfeld, M.E.: Components of the protein fraction of oxidized low density lipoprotein stimulate interleukin-1 $\alpha$  production by rabbit arterial macrophage-derived foam cells. *J. Lipid Res.*, 36 (1995) 2232-2242.
- 1016 Machattie, C.T. and Berger, G.M.B.: A comprehensive method for characterizing plasma lipoprotein and subfractions using gradient gel electrophoresis and immunoblotting. *Eur. J. Lab. Med.*, 3 (1995) 87-94; C.A., 123 (1995) 250611r.
- 1017 Nauck, M., Winkler, K., März, W. and Wieland, H.: Quantitative determination of high-, low-, and very-low-density lipoproteins and lipoprotein(a) by agarose gel electrophoresis and enzymatic cholesterol staining. *Clin. Chem. (Washington)*, 41 (1995) 1761-1767.
- 1018 Santanam, N. and Parthasarathy, S.: Cellular cysteine generation does not contribute to the initiation of LDL oxidation. *J. Lipid Res.*, 36 (1995) 2203-2211.
- 1019 Sheetl, M.J.: MDL 29311, a phenolic antioxidant interferes with the interaction of apoC with VLDL: a possible explanation for its triglyceride-lowering effect. *J. Lipid Res.*, 36 (1995) 2609-2621.
- 1020 Shishino, K., Saheki, S. and Takeuchi, N.: Separation of LDL subclasses by non-denaturing polyacrylamide slab gel electrophoresis and distribution of the subclasses in hyperlipidemias. *Seibutsu Shiryo Bunseki*, 18 (1995) 96-101; C.A., 123 (1995) 334162h.
- 1021 Welty, F.K., Seman, L. and Yen, F.T.: Purification of the apolipoprotein B-67-containing low density lipoprotein particle and its affinity for the low density lipoprotein receptor. *J. Lipid Res.*, 36 (1995) 2622-2629.
- 1022 Westerlund, J. and Yao, Z.: Elution of lipoprotein fractions containing apolipoproteins E and A-I in size exclusion on Superose 6 columns is sensitive to mobile phase pH and ionic strength. *J. Chromatogr. A*, 718 (1995) 59-66.

See also 1159, 1331.

#### 13. STEROIDS

##### 13a. General techniques

- 1023 Abubaker, M.A., Petersen, J.R. and Bissell, M.G.: Micellar electrokinetic capillary chromatographic separation of steroids in urine by trioctylphosphine oxide and cationic surfactant. *J. Chromatogr. B*, 673 (1995) 31-38.
- 1024 Kobayashi, Y., Matsui, J. and Watanabe, F.: Simultaneous separation of free and conjugated steroids by micellar electrokinetic chromatography and its clinical application. *Biol. Pharm. Bull.*, 18 (1995) 1614-1616; C.A., 124 (1996) 21910r.

##### 13b. Pregnane and androstane derivatives

- 1025 Koutny, L.B., Schmalzing, D., Taylor, T.A. and Fuchs, M.: Microchip electrophoretic immunoassay for serum cortisol. *Anal. Chem.*, 68 (1996) 18-22.

- 1026 Liu, Y., Gu, J., Fu, R. and Wang, X.: (Cyclodextrin-modified sodium dodecyl sulphate micellar electrokinetic chromatography separation of norgestrel enantiomers). *Sepu*, 13 (1995) 387-389; *C.A.*, 123 (1995) 296465z.
- 13d. *Sterols*
- 1027 Anwar, M., Hashim, M., Yaqoob, M. and Yasinzai, M.M.: Enzymic determination of electrophoretically separated LDL-cholesterol from sera of cardiac patients. *J. Chem. Soc. Pak.*, 17 (1995) 40-42; *C.A.*, 123 (1995) 280008s.
14. STEROID GLYCOSIDES AND SAPONINS
- See 1557.
15. TERPENES AND OTHER VOLATILE AROMATIC COMPOUNDS
- 15a. *Terpenes*
- 1028 Moodley, V.E., Mulholland, D.A. and Raynor, M.W.: Micellar electrokinetic capillary chromatography of limonoid glucosides from citrus seeds. *J. Chromatogr. A*, 718 (1995) 187-193.
17. AMINES, AMIDES AND RELATED NITROGEN COMPOUNDS
- 17a. *Amines and polyamines*
- 1029 Sainthorant, C., Morin, P., Dreux, M., Baudry, A. and Goetz, N.: Separation of phenylenediamine, phenol and aminophenol derivatives by micellar electrokinetic chromatography. Comparison of the role of anionic and cationic surfactants. *J. Chromatogr. A*, 717 (1995) 167-179.
- 1030 Zhou, G., Yu, Q., Ma, Y., Xue, J., Zhang, Y. and Lin, B.: Determination of polyamines in serum by high-performance capillary zone electrophoresis with indirect ultraviolet detection. *J. Chromatogr. A*, 717 (1995) 345-349.
- See also 800, 893, 1038, 1563.
- 17b. *Catecholamines and their metabolites*
- See 806, 812.
- 17d. *Other amine derivatives and amides (excl. peptides)*
- 1031 Lin, C.-E., Chiou, W.-C. and Lin, W.-C.: Capillary zone electrophoretic separation of alkylbenzyl quaternary ammonium compounds: effect of organic modifier. *J. Chromatogr. A*, 722 (1996) 345-352.
- See also 1003.
18. AMINO ACIDS AND PEPTIDES; CHEMICAL STRUCTURE OF PROTEINS
- 18a. *Amino acids and their derivatives*
- 1032 Chan, K.C., Muschik, G.M. and Issaq, H.J.: Separation of tryptophan and related indoles by micellar electrokinetic chromatography with KrF laser-induced fluorescence detection. *J. Chromatogr. A*, 718 (1995) 203-210.
- 1033 Corradini, D., Cannarsa, G., Corradini, C., Nicoletti, I., Pizzoferrato, L. and Vivanti, V.: Analysis of  $\epsilon$ -N-2-furoylmethyl-L-lysine (furosine) in dried milk by capillary electrophoresis with controlled electroosmotic flow using *N,N,N',N'*-tetramethyl-1,3-butadiene in the running electrolyte solution. *Electrophoresis (Weinheim)*, 17 (1996) 120-124.
- 1034 Hu, T., Zuo, H., Riley, C.M., Stobaugh, J.F. and Lunte, S.M.: Determination of  $\alpha$ -difluoromethylornithine in blood by microdialysis sampling and capillary electrophoresis with UV detection. *J. Chromatogr. A*, 716 (1995) 381-388.
- 1035 Huang, X. and Kok, W.T.: Determination of thiols by capillary electrophoresis with electrochemical detection using a palladium field-decoupler and chemically modified electrodes. *J. Chromatogr. A*, 716 (1995) 347-353.
- 1036 Lee, Y.-H. and Lin, T.-I.: Capillary electrophoretic determination of amino acids. Improvement by cyclodextrin additives. *J. Chromatogr. A*, 716 (1995) 335-346.
- 1037 Michalke, B.: Capillary electrophoretic methods for a clear identification of selenoamino acids in complex matrices such as human milk. *J. Chromatogr. A*, 716 (1995) 323-329.
- 1038 Nouadje, G., Couderc, F., Puig, P. and Hernandez, L.: Combination of micellar electrokinetic chromatography and laser-induced fluorescence detection for the determination of pressor amines and some principal amino acids in wine. *J. Capillary Electrophor.*, 2 (1995) 117-124; *C.A.*, 123 (1995) 283841u.
- 1039 Nouadje, G., Nertz, M. and Courderc, F.: Study of the racemization of L-serine by cyclodextrin-modified micellar electrokinetic chromatography and laser-induced fluorescence detection. *J. Chromatogr. A*, 716 (1995) 331-334.
- 1040 Shingaki, M., Monma, C., Obata, H., Tadano K., Kai, A., Yanagawa, Y. and Itoh, T.: (Detection of hippurate hydrolysis by capillary electrophoresis technique for *Campylobacter jejuni*). *Tokyo-toritsu Eisei Kenkyusho Kenkyu Nonpo*, 45 (1994) 3-6; *C.A.*, 123 (1995) 192794q.
- 1041 Skocir, E. and Prosek, M.: Determination of amino acid ratios in natural products by micellar electrokinetic chromatography. *Chromatographia*, 41 (1995) 638-644.
- 1042 Swartz, M.E., Mazzeo, J.R., Grover, E.R. and Brown, P.R.: Separation of amino acid enantiomers by micellar electrokinetic capillary chromatography using synthetic chiral surfactants. *Anal. Biochem.*, 231 (1995) 65-71.
- 1043 Yoshinaga, M. and Tanaka, M.: Enantiomeric separation of dansylamino acids by capillary zone electrophoresis with selectively methylated  $\gamma$ -cyclodextrin derivatives. *Anal. Chim. Acta*, 316 (1995) 121-127.
- See also 806, 809, 868, 881, 920, 924, 928, 929, 930, 1563.

## 18b. Peptides, peptidic and proteinous hormones, growth factors

- 1044 Beijersten, I. and Westerlund, D.: Capillary zone electrophoresis and micellar electrokinetic chromatography, with taurodeoxycholate as micellar agent, of protein kinase A peptide substrates. *Electrophoresis (Weinheim)*, 17 (1996) 161-167.
- 1045 Beijersten, I. and Westerlund, D.: Derivatization of dipeptides with 4-fluoro-7-nitro-2,1,3-benzoxadiazole for laser-induced fluorescence and separation by micellar electrokinetic chromatography. *J. Chromatogr. A*, 716 (1995) 389-399.
- 1046 Delosme, R., Olive, J. and Wollman, F.-A.: Changes in light energy distribution upon state transitions: an *in vivo* photo-acoustic study of the wild type and photosynthesis mutants from *Chlamydomonas reinhardtii*. *Biochim. Biophys. Acta*, 1273 (1996) 150-158.
- 1047 Herget, T., Oehrlein, S.A., Pappin, D.J.C., Rozengurt, E. and Parker, P.J.: The mristoylated alanine-rich C-kinase substrate (MARCKS) is sequentially phosphorylated by conventional, novel and atypical isotypes of protein kinase C. *Eur. J. Biochem.*, 233 (1995) 448-457.
- 1048 Hirano, T., Franzen, B., Uryu, K., Okuzawa, K., Alaiya, A.A., Vanki, F., Rodrigues, L., Ebihara, Y., Kato, H. and Auer, G.: Detection of polypeptides associated with the histopathological differentiation of primary lung carcinoma. *Br. J. Cancer*, 72 (1995) 840-848; *C.A.*, 123 (1995) 334159n.
- 1049 Hoffmann, T., Reinhold, D., Kähne, T., Faust, J., Neubert, K., Frank, R. and Ansorge, S.: Inhibition of dipeptidyl peptidase IV (DP IV) by anti-DP IV antibodies and non-substrate X-X-Pro-oligopeptides ascertained by capillary electrophoresis. *J. Chromatogr. A*, 716 (1995) 355-362.
- 1050 Hurst, W.J. and Zagon, I.S.: Isolation, separation, and detection of enkephalins: a review of methods for high performance liquid chromatography and capillary electrophoresis. *J. Liq. Chromatogr.*, 18 (1995) 2943-2967 - a review with 92 refs.
- 1051 Kuhn, R., Riester, D., Fleckenstein, B. and Wiesmüller, K.-H.: Evaluation of an optically active crown ether for the chiral separation of di- and tripeptides. *J. Chromatogr. A*, 716 (1995) 371-379.
- 1052 Licklider, R., Kuhr, W.G., Lacey, M.P., Keough, T., Purdon, M.P. and Takigiku, R.: On-line microreactors: capillary electrophoresis/mass spectrometry for the analysis of proteins and peptides. *Anal. Chem.*, 67 (1995) 4170-4177.
- 1053 Ma, S., Kálman, F., Kálman, A., Thunecke, F. and Horváth, C.: Capillary zone electrophoresis at subzero temperatures. I. Separation of the *cis* and *trans* conformers of small peptides. *J. Chromatogr. A*, 716 (1995) 167-182.
- 1054 MacDonald, J.I.S. and Possmayer, F.: Stimulation of phosphatidylcholine biosynthesis in mouse MLE-12 type-II cells by conditioned medium from cortisol-treated rat fetal lung fibroblasts. *Biochem. J.*, 312 (1995) 425-431.
- 1055 Martinez, C., Molero, J.C., Ruiz, P., Del Arco, A., Andres, A. and Carrascosa, J.M.: Impairment of the liver insulin receptor autoactivation cascade at full-term pregnancy in the rat. *Biochem. J.*, 311 (1995) 523-529.
- 1056 Moore, I.L., Pritchard, G.G. and Otter, D.E.: Use of capillary zone electrophoresis in an investigation of peptide uptake by dairy starter bacteria. *J. Chromatogr. A*, 718 (1995) 211-215.
- 1057 Orwar, O., Fishman, H.A., Ziv, N.E., Scheller, R.H. and Zare, R.N.: Use of 2,3-naphthalenedicarboxaldehyde derivatization for single-cell analysis of glutathione by capillary electrophoresis and histochemical localization by fluorescence microscopy. *Anal. Chem.*, 67 (1995) 4261-4268.
- 1058 Peters, H.I., Chang, Y.-W. and Traugh, J.A.: Phosphorylation of elongation factor 1 (EF-1) by protein kinase C stimulates GDP/GTP-exchange activity. *Eur. J. Biochem.*, 234 (1995) 550-556.
- 1059 Ragunandan, R. and Ingram, V.M.: Hyperphosphorylation of the cytoskeletal protein Tau by the MAP-kinase PK40 erk2: regulation by prior phosphorylation with cAMP-dependent protein kinase c. *Biochem. Biophys. Res. Commun.*, 215 (1995) 1056-1066.
- 1060 Sacks, D.B., Mazus, B. and Joyal, J.L.: The activity of calmodulin is altered by phosphorylation: modulation of calmodulin function by the site of phosphate incorporation. *Biochem. J.*, 312 (1995) 197-204.
- 1061 Strausbauch, M.A., Landers, J.P. and Wettstein, P.J.: Mechanism of peptide separations by solid phase extraction capillary electrophoresis at low pH. *Anal. Chem.*, 68 (1996) 306-314.
- 1062 Taylor, S.W., Ross, M.M. and Waite, J.H.: Novel 3,4-di- and 3,4,5-trihydroxyphenylalanine-containing polypeptides from the blood cells of the ascidians *Ascidia ceratodes* and *Molgula manhattensis*. *Arch. Biochem. Biophys.*, 324 (1995) 228-240.
- 1063 Vinther, A., Holm, A., Hoeg-Jensen, T., Jespersen, A.M., Klausen, N.K., Christensen, T. and Sorensen, H.H.: Synthesis of stereoisomers and isoforms of a tryptic heptapeptide fragment of human growth hormone and analysis by reverse-phase HPLC and capillary electrophoresis. *Eur. J. Biochem.*, 235 (1996) 304-309.
- 1064 Xu, X., Luo, G.-A. and Lin, B.-C.: (Calculation on isoelectric point and net charge of peptides). *GaoDeng Xuexiao Huaxue Xuebao*, 16 (1995) 1464-1466; *C.A.*, 123 (1995) 222148b.
- 1065 Yssad, T., Combettes, M. and Ferre, P.: Isoproterenol inhibits insulin-stimulated tyrosine phosphorylation of the insulin receptor without increasing its serine/threonine phosphorylation. *Eur. J. Biochem.*, 234 (1995) 108-115.

See also 809, 828, 859, 871, 881, 887, 1366, 1368, 1551.

## 18c. Elucidation of structure of proteins and enzymes

- 1066 Arai, K., Sumi, S.-H., Yoshida, K.-i. and Komoda, T.: A precursor form of human kidney  $\gamma$ -glutamyl transferase in normal and cancerous tissues, and its possible post-translational modification. *Biochim. Biophys. Acta*, 1253 (1995) 33-38.
- 1067 Bihoreau, N., Ramon, C., Vincentelli, R., Levillain, J.-P. and Troalen, F.: Peptide mapping characterization by capillary electrophoresis of a human monoclonal anti-Rh(D) antibody produced for clinical study. *J. Capillary Electrophor.*, 2 (1995) 197-202; *C.A.*, 123 (1995) 253819a.
- 1068 Fujisawa, R., Wada, Y., Nodasaka, Y. and Kuboki, Y.: Acidic amino acid-rich sequences as binding sites of osteonectin to hydroxyapatite crystals. *Biochim. Biophys. Acta*, 1292 (1996) 53-60.
- 1069 Khisty, V.J., Munske, G.R. and Randall, L.L.: Mapping of the binding frame for the chaperone SecB within a natural ligand, galactose-binding protein. *J. Biol. Chem.*, 270 (1995) 25920-23927.

- 1070 Mizuno, M., Kitafima, T., Tomita, M. and Kuboki, Y.: The osteoblastic MC3T3-E1 cells synthesized C-terminal propeptide of type I collagen, which promoted cell-attachment of osteoblasts. *Biochim. Biophys. Acta*, 1310 (1996) 97-102.
- 1071 Nagase, H., Enyoyji, K.-i., Shima, M., Kitazato, K., Yoshioka, A., Saito, H. and Kato, H.: Effect of depolymerized holothurian glycosaminoglycan (DHG) on the activation of factor VIII and factor V by thrombin. *J. Biochem. (Tokyo)*, 119 (1996) 63-69.
- 1072 Nishina, H., Nimota, K., Kukimoto, I., Maehama, T., Takahashi, K., Hoshino, S.-i., Kanaho, Y. and Katada, T.: Significance of Thr182 in the nucleotide-exchange and GTP-hydrolysis reactions of the  $\alpha$  subunit of GTP-binding protein. *J. Biochem. (Tokyo)*, 118 (1995) 1083-1089.
- 1073 Perkins, J.R. and Tomer, K.B.: Characterization of the lower-molecular-mass fraction of venoms from *Dendroaspis jamesoni kaimosae* and *Micruurus fulvius* using capillary-electrophoresis electrospray mass spectrometry. *Eur. J. Biochem.*, 233 (1995) 815-827.
- 1074 Slade, M.J., Pócsi, I., Kirby, R.B., Jones, J.K., Ganz, S.E., Taylor, S.A. and Price, R.G.: Isolation of pepsin-resistant laminin fragments from human placenta: effect on epithelial cells cultured from the kidneys of patients with autosomal dominant polycystic kidney disease (ADPKD). *Biochim. Biophys. Acta*, 1310 (1996) 25-31.
- 1075 Tsou, C.-L.: Inactivation precedes overall molecular conformation changes during enzyme denaturation. *Biochim. Biophys. Acta*, 1253 (1995) 151-162 - a review with 107 refs.
- 1076 Ueda, T., Iwashita, H., Hashimoto, Y. and Imoto, T.: Stabilization of lysozyme by introducing N-glycosylation signal sequence. *J. Biochem. (Tokyo)*, 119 (1996) 157-161.
- 1077 Wells, N.J., Fry, A.M., Guano, F., Norbury, C. and Hickson, I.D.: Cell cycle phase-specific phosphorylation of human topoisomerase II $\alpha$ . Evidence of a role for protein kinase C. *J. Biol. Chem.*, 270 (1995) 28357-28363.
- See also 871, 1052, 1156, 1160, 1167, 1187, 1275.
- ## 19. PROTEINS
- ### 19a. General techniques
- 1078 Bartzatt, R.L.: Identification of proteins using affinity affi-gel simultaneously with acrylamide electrophoresis. *Anal. Lett.*, 28 (1995) 2653-2661.
- 1079 Chen, J., Evison, J. and Dickinson, E.: Surfactant-protein competitive adsorption and electrophoretic mobility of oil-in-water emulsions. *Spec. Publ.-R. Soc. Chem.*, 156(Food Macromolecules and Colloids) (1995) 256-260; C.A., 123 (1995) 254940v.
- 1080 Chiari, M., Nesi, M., Sandoval, J.E. and Pesek, J.J.: Capillary electrophoretic separation of proteins using stable, hydrophilic poly(acryloylaminooxyethanol)-coated columns. *J. Chromatogr. A*, 717 (1995) 1-13.
- 1081 Cole, K.D. and Cabezas, H., Jr.: Recent progress in the electrochromatography of proteins. *Appl. Biochem. Biotechnol.*, 54 (1995) 159-172; C.A., 123 (1995) 280130a.
- 1082 Corradini, D. and Cannarsa, G.: Capillary electrophoresis of proteins in bare fused-silica capillaries. *LC-GC Int.*, 9 (1996) 34-40.
- 1083 Dionisi, H.M., Checa, S.K. and Viale, A.M.: Protein immunoblotting of stained gels. *BioTechniques*, 19 (1995) 348-350; C.A., 123 (1995) 222172z.
- 1084 Engelhardt, H. and Cuñat-Walter, M.A.: Use of plate numbers achieved in capillary electrophoretic protein separations for characterization of capillary coatings. *J. Chromatogr. A*, 717 (1995) 15-23.
- 1085 Gil, M.L., Ramirez, M.C., Terencio, M.C. and Castell, J.V.: Immunochemical detection of protein adducts in cultured human hepatocytes exposed to diclofenac. *Biochim. Biophys. Acta*, 1272 (1995) 140-146.
- 1086 Matsuo, T.: (Ambient low-temperature two-dimensional electrophoresis). *Tanpakushitsu Kakusan Koso*, 40 (1995) 1867-1870; C.A., 123 (1995) 221961z.
- 1087 Park, J.K., Oh, C.Y. and Chang, H.N.: Protein separation in high voltage fields. *Bioseparation*, 5 (1995) 203-208; C.A., 123 (1995) 334157k.
- 1088 Ranganathan, V. and De, P.K.: Western blot of proteins from Coomassie-stained polyacrylamide gels. *Anal. Biochem.*, 234 (1996) 102-104.
- 1089 Reif, O.-W. and Freitag, R.: Studies of complexes between proteases, substrates and the protease inhibitor  $\alpha_2$ -macroglobulin using capillary electrophoresis with laser-induced fluorescence detection. *J. Chromatogr. A*, 716 (1995) 363-369.
- 1090 Ren, J., Deng, Y. and Cheng, J.: (Capillary zone electrophoresis of proteins with laser-based interference refractive index detection). *Fenxi Kexue Xuebao*, 10 (1994) 20-24; C.A., 123 (1995) 250480x.
- 1091 Schouten, Y., Veraart, J.R., Gooijer, C. and Lingeman, H.: Improved protein separation using capillary electrophoresis and phytic acid. *Biomed. Chromatogr.*, 9 (1995) 269-270; C.A., 124 (1996) 25094a.
- 1092 Schwer, C.: Capillary isoelectric focusing: a routine method for protein analysis? *Electrophoresis (Weinheim)*, 16 (1995) 2121-2126.
- 1093 Sudha, K. and Muralidhar, K.: Efficacy of passive transfer of proteins from preparative polyacrylamide gels to nitrocellulose membranes. *Indian J. Biochem. Biophys.*, 32 (1995) 245-248; C.A., 123 (1995) 280145j.
- See also 760, 771, 782, 789, 811, 822, 827, 831, 991, 1011, 1214, 1294, 1386, 1442.
- ### 19b. Proteins of cells, viruses and subcellular particles
- 1094 Akaiishi, T., Yokosawa, H. and Sawada, H.: Regulatory subunit complex dissociated from 26S proteasome: isolation and characterization. *Biochim. Biophys. Acta*, 1245 (1995) 331-338.
- 1095 Azaïs-Braesco, V., Dodeman, I., Delpal, S., Alexandre-Gouabau, M.-C., Partier, A., Borel, P. and Golier, P.: Vitamin A contained in the lipid droplets of rat liver stellate cells is substrate for acid retinyl ester hydrolase. *Biochim. Biophys. Acta*, 1259 (1995) 271-276.
- 1096 Balbaa, M., Honke, K. and Makita, A.: Regulation of glycolipid sulfotransferase by tyrosine kinases in human renal cancer cells. *Biochim. Biophys. Acta*, 1299 (1996) 141-145.

- 1097 Boffoli, D., Seacco, S.C., Vergari, R., Persio, M.T., Solarino, G., Laforgia, R. and Papa, S.: Ageing is associated in females with a decline in the content and activity of the *b-c1* complex in skeletal muscle mitochondria. *Biochim. Biophys. Acta*, 1315 (1996) 66-72.
- 1098 Bretscher, A., Gary, R. and Berryman, M.: Soluble ezrin purified from placenta exists as stable monomers and elongated dimers with masked C-terminal ezrin-radixin-moesin association domains. *Biochemistry*, 34 (1995) 16830-16837.
- 1099 Burkhardt, J., Huber, L.A., Dieplinger, H., Blocker, A., Griffiths, G. and Desjardins, M.: Gaining insight into a complex organelle, the phagosome, using two-dimensional gel electrophoresis. *Electrophoresis (Weinheim)*, 16 (1995) 2249-2257.
- 1100 Cahill, A., Baio, D.L. and Cunningham, C.C.: Isolation and characterization of rat liver mitochondrial ribosomes. *Anal. Biochem.*, 232 (1995) 47-55.
- 1101 Celis, J.E., Rasmussen, H.H., Gromov, P., Olsen, E., Madsen, P., Leffers, H., Honoré, B., Dejgaard, K., Vorum, H., Kristensen, D.B., Ostergaard, M., et al.: The human keratinocyte two-dimensional gel protein database (update 1995): Mapping components of signal transduction pathways. *Electrophoresis (Weinheim)*, 16 (1995) 2177-2240 - a review with 33 refs.
- 1102 Chen, W.-J., Lewis, K.S., Chandra, G., Cogswell, J.P., Stinnett, S.W., Kadwell, S.H. and Gray, J.G.: Characterization of human E4BP4, a phosphorylated bZIP factor. *Biochim. Biophys. Acta*, 1264 (1995) 388-396.
- 1103 Feng, S., Xu, J., Wang, F., Kan, M. and McKeehan, W.L.: Nuclear localization of a complex of fibroblast growth factor(FGF)-1 and an NH<sub>2</sub>-terminal fragment of FGF receptor isoforms R4 and R1 $\alpha$  in human liver cells. *Biochim. Biophys. Acta*, 1310 (1996) 67-73.
- 1104 Groetttrup, M., Rupper, T., Kuehn, L., Seeger, M., Standera, S., Koszinowski, U. and Kloetzel, P.M.: The interferon- $\gamma$ -inducible 115 regulator (PA28) and the LMP2/LMP7 subunits govern the peptide production by the 20S proteasome *in vitro*. *J. Biol. Chem.*, 270 (1995) 23808-23815.
- 1105 Hamada, K., Takuwa, N., Zhou, W., Kumada, M. and Takuwa, Y.: Protein kinase C inhibits the CAK-CDK2 cyclin-dependent kinase cascade and G1/S cell cycle progression in human diploid fibroblasts. *Biochim. Biophys. Acta*, 1310 (1996) 149-156.
- 1106 Hu, C.-C. and Ghabrial, S.A.: The conserved, hydrophilic and arginine-rich N-terminal domain of cucumovirus coat proteins contributes to their anomalous electrophoretic mobilities in sodium dodecylsulfate-polyacrylamide gels. *J. Virol. Methods*, 55 (1995) 367-379; C.A., 124 (1996) 25088b.
- 1107 Ichikawa, N., Yoshida, Y., Hashimoto, T. and Tagawa, K.: An intrinsic ATPase inhibitor binds near the active site of yeast mitochondrial F1-ATPase. *J. Biochem. (Tokyo)*, 119 (1996) 193-199.
- 1108 Jochen, A.L., Hays, J. and Mick, G.: Inhibitory effects of cerulenin on protein palmitoylation and insulin internalization in rat adipocytes. *Biochim. Biophys. Acta*, 1259 (1995) 65-72.
- 1109 Kim, T.J., Kim, Y. and Pillai, S.: Association of activated phosphatidylinositol 3-kinase with p120 $\text{c}\beta\text{l}$  in antigen receptor-ligated B cells. *J. Biol. Chem.*, 270 (1995) 27504-27509.
- 1110 Melkonian, K.A., Chu, T., Tortorella, L.B. and Brown, D.A.: Characterization of proteins in detergent-resistant membrane complexes from Madin-Darby canine kidney epithelial cells. *Biochemistry*, 34 (1995) 16161-16170.
- 1111 Ohashi, I., Nishijima, J., Murata, A., Toda, H., Kato, T., Hayashida, H., Shiozaki, H. and Monden, M.: Inhibitory effect of a synthetic protease inhibitor (gabexate mesilate) on the respiratory burst oxidase in human neutrophils. *J. Biochem. (Tokyo)*, 118 (1995) 1001-1006.
- 1112 Olsen, E., Rasmussen, H.H. and Celis, J.E.: Identification of proteins that are abnormally regulated in differentiated cultured human keratinocytes. *Electrophoresis (Weinheim)*, 16 (1995) 2241-2248.
- 1113 Ono, A. and Kawakita, M.: Conformational aberrance of the Sendai virus F<sub>0</sub> protein in thapsigargin-treated cells allowing exit from the endoplasmic reticulum but causing arrest at the Golgi complex. *J. Biochem. (Tokyo)*, 118 (1995) 1248-1254.
- 1114 Schmerr, M.J., Goodwin, K.R., Cutlip, R.C. and Jenny, A.L.: A competition assay to detect scrapie prion protein by capillary electrophoresis. *J. Microcolumn Sep.*, 7 (1995) 521-527; C.A., 124 (1996) 4322h.
- 1115 Seki, K., Sakurada, J., Murai, M., Usui, A., Seong, H.K., Jitsukawa, H. and Masuda, S.: Auxiliary method for clonal identification of *Staphylococcus aureus* by protein band pattern of released proteins on SDS-polyacrylamide gel. *Microbiol. Immunol.*, 39 (1995) 615-617; C.A., 123 (1995) 192816y.
- 1116 Shean, B.S. and Mykles, D.L.: Polyubiquitin in crustacean striated muscle: increased expression and conjugation during molt-induced claw muscle atrophy. *Biochim. Biophys. Acta*, 1264 (1995) 312-322.
- 1117 Shi, X.-P., Yin, K.-C., Ahern, J., Davis, L.J., Stern, A.M. and Waxman, L.: Effects of N1-guanyl-1,7-diaminoheptane, an inhibitor of deoxyhypusine synthase, on the growth of tumorigenic cell lines in culture. *Biochim. Biophys. Acta*, 1310 (1996) 119-126.
- 1118 Teerink, H., Voorma, H.O. and Thomas, A.A.M.: The human insulin-like growth factor II leader 1 contains an internal ribosomal entry site. *Biochim. Biophys. Acta*, 1264 (1995) 403-408.
- 1119 Yang, Y., Fröh, K., Ahn, K. and Peterson, P.A.: *In vivo* assembly of the proteasomal complexes, implications for antigen processing. *J. Biol. Chem.*, 270 (1995) 26587-27694.
- 1120 Zhang, Q., Du, N. and Xu, W.: (The analysis of the structural polypeptides of rabbit hemorrhagic disease virus [RHDV]). *Zhongguo Bingduxue*, 10 (1995) 258-260; C.A., 123 (1995) 334160f.
- See also 1085, 1129, 1226, 1288, 1350.
- 19c. *Proteins synthesized by genetic manipulation, monoclonal antibodies*
- 1121 Andoreasu, H.A. and Yan, F.: Methods for detecting mutations with a combination of two-dimension electrophoresis, nucleic acid hybridization, and PCR amplification. *Jpn. Kokai Tokkyo Koho JP 07,115,999 [95,115,999] (Cl. C12Q1/68), 09 May 1995, Appl. 92/130,668, 22 May 1992; 16 pp.; C.A., 123 (1995) 220257n.*
- 1122 Chen, C.-J. and Traugh, J.A.: Expression of recombinant elongation factor 1 beta from rabbit in *Escherichia coli*. Phosphorylation by casein kinase II. *Biochim. Biophys. Acta*, 1264 (1995) 303-311.

- 1123 Chen, S., Wang, C., Zhong, X., Hu, Y. and Wang, Q.: (Isolation and purification of the fused protein encoded by synthetic antigen gene of *Plasmodium falciparum* and its expression in *Escherichia coli*). *Shengwu Gongcheng Xuebao*, 11 (1995) 196-199; C.A., 123 (1995) 250481y.
- 1124 Ishii, T., Aoki, N., Noda, A., Adachi, T., Nakamura, R. and Matsuda, T.: Carboxy-terminal cytoplasmic domain of mouse butyrophilin specifically associates with a 150-kDa protein of mammary epithelial cells and milk fat globule membrane. *Biochim. Biophys. Acta*, 1245 (1995) 285-292.
- 1125 Lynch, G.W., Dearden, M., Sloane, A.J., Humphrey-Smith, I. and Cunningham, A.L.: Analysis of recombinant and native CD4 by one- and two-dimensional gel electrophoresis. *Electrophoresis (Weinheim)*, 17 (1996) 227-234.
- 1126 Madsen, P., Gromov, P. and Celis, J.E.: Expression of cDNA clones by coupled *in vitro* transcription/translation and transfection into COS-1 cells: Protein mapping in two-dimensional gels. *Electrophoresis (Weinheim)*, 16 (1995) 2258-2261.
- 1127 Naito, K., Kashima, J. and Shiono, H.: Restriction enzyme labels and DNA substrates for simultaneous determination of multiple antigens or antibodies. *Jpn. Kokai Tokkyo Koho JP 07,270,419 [95,270,419] (Cl. GO1N33/543)*, 20 Oct. 1995, Appl. 94/59,258, 29 Mar. 1994; 5 pp.; C.A., 124 (1996) 7050d.
- 1128 Odawara, F., Kurasaki, M., Suzuki-Kurasaki, M., Oikawa, S., Emoto, T., Yamasaki, F., Arias, A.R.L. and Kojima, Y.: Expression of human metallothionein-2 in *Escherichia coli*: cadmium tolerance of transformed cells. *J. Biochem. (Tokyo)*, 118 (1995) 1131-1137.
- 1129 Ozawa, M., Terada, H. and Pedraza, C.: The fourth armadillo repeat of plakoglobin ( $\gamma$ -catenin) is required for its high affinity binding to the cytoplasmic domains of E-cadherin and desmosomal cadherin Dsg2, and the tumor suppressor APC protein. *J. Biochem. (Tokyo)*, 118 (1995) 1077-1082.
- 1130 Sano, T., Pandori, M.W., Chen, X., Smith, C.L. and Cantor, C.R.: Recombinant core streptavidins. A minimun-sized core streptavidin has enhanced structural stability and higher accessibility to biotinylated macromolecules. *J. Biol. Chem.*, 270 (1995) 28204-28209.
- 1131 Tanaka, S., Fukui, T., Yamamoto, J., Shima, Y.-i., Kume, T., Ohgo, M. and Ichikawa, A.: Processing and activation of recombinant mouse mastocytoma histidine decarboxylase in the particulate fraction of Sf9 cells by porcine pancreatic elastase. *Biochim. Biophys. Acta*, 1253 (1995) 9-12.
- 1132 Ulycznyj, P.I., Salmon, K.A., Douillard, H. and DuBow, M.S.: Characterization of the *Pseudomonas aeruginosa* transposable bacteriophage D3112 A and B genes. *Biochim. Biophys. Acta*, 1264 (1995) 249-253.
- 1133 Worax, V.L., Burkhardt, W. and Spremulli, L.L.: Cloning, sequence analysis and expression of mammalian mitochondrial protein synthesis elongation factor Tu. *Biochim. Biophys. Acta*, 1264 (1995) 347-356.
- 1134 Zhang, P., Zhang, S., Zhang, Z., Woessner, J.F., Jr. and Lee, M.Y.W.T.: Expression and physicochemical characterization of human proliferating cell nuclear antigen. *Biochemistry*, 34 (1995) 10703-10712.
- 19d. *Microbial and plant proteins*
- 1135 Bini, L., Sanchez-Campillo, M., Santucci, A., Magi, B., Marzocchi, B., Comanducci, M., Christiansen, G., Birkelund, S., Cevenini, R., Vretou, E., Ratti, G. and Pallini, V.: Mapping of *Chlamydia trachomatis* proteins by Immobiline-polyacrylamide two-dimensional electrophoresis: spot identification by N-terminal sequencing and immunoblotting. *Electrophoresis (Weinheim)*, 17 (1996) 185-190.
- 1136 Dorrestein, E., Ferreira, R.B., Laureano, O. and Teixeira, A.R.: Electrophoretic and FPLC analysis of soluble proteins in four Portuguese wines. *Am. J. Enol. Vitic.*, 46 (1995) 235-242; C.A., 123 (1995) 226135t.
- 1137 Enami, I., Murayama, H., Ohta, H., Kamo, M., Nakazato, K. and Shen, J.-R.: Isolation and characterization of a Photosystem II complex from the red alga *Cyanidium caldarium*: association of cytochrome c-550 and a 12 kDa protein with the complex. *Biochim. Biophys. Acta*, 1232 (1995) 208-216.
- 1138 Jouanneau, Y., Meyer, C., Naud, I. and Klipp, W.: Characterization of an fdxN mutant of *Rhodobacter capsulatus* indicates that ferredoxin I serves as electron donor to nitrogenase. *Biochim. Biophys. Acta*, 1232 (1995) 33-42.
- 1139 Kraic, J., Horvath, L., Gregova, E. and Zak I.: (The standard methods of electrophoretic separation of glutenins and gliadins of wheat by SDS-PAGE and A-PAGE). *Rostl. Vyroba*, 41 (1995) 219-223; C.A., 123 (1995) 226151v.
- 1140 Lafiandra, D., Porceddu, E., Colaprico, G. and Margiotta, B.: Combined reversed phase high performance liquid chromatography (RP-HPLC) and electrophoretic techniques in genetics and breeding of wheat storage proteins. In: Kruger, J.E. and Bietz, J.A. (Editors), *High-Perform. Liq. Chromatogr. Cereal Legume Proteins*, American Association of Cereal Chemists, St. Paul, 1994, pp. 273-325; C.A., 124 (1996) 28219f - a review with many refs.
- 1141 Martinelli, L. and Gianazza, E.: Biochemical changes during regeneration of sunflower (*Helianthus annuus* L.) *Electrophoresis (Weinheim)*, 17 (1996) 191-197.
- 1142 Mejia, R., Gómez-Eichelmann, M.C. and Fernández, M.S.: Membrane fluidity of *Escherichia coli* during heat-shock. *Biochim. Biophys. Acta*, 1239 (1995) 195-200.
- 1143 Ochiai, K. and Kawamoto, I.: Two-dimensional gel electrophoresis of ribosomal proteins as a novel approach to bacterial taxonomy: application to the genus Arthrobacter. *Biosci., Biotechnol., Biochem.*, 59 (1995) 1679-1687; C.A., 123 (1995) 250479d.
- 1144 Pollard, N.J., Wrigley, C.W., Bekes, F., Aumatell, A. and MacRitchie, F.: Distinction between genotypes of *Lupinus* species by sodium dodecyl sulphate-gel electrophoresis and by capillary electrophoresis. *Electrophoresis (Weinheim)*, 17 (1996) 221-223.
- 1145 Salmanowicz, B.P.: Capillary electrophoresis of seed albumins from *Vicia* species using uncoated and surface-modified fused silica capillaries. *Chromatographia*, 41 (1995) 99-106.
- 1146 Shewry, P.R., Tatham, A.S. and Fido, R.J.: Separation of plant proteins by electrophoresis. *Methods Mol. Biol. (Totowa)*, 49(Plant Gene Transfer and Expression Protocols) (1995) 399-422; C.A., 124 (1996) 25079z.

See also 1230, 1354.

- 1147 Sparvoli, F., Daminati, M.G., Lioi, L. and Bollini, R.: *In vivo* endoproteolytically cleaved phaseolin is stable and accumulates in developing *Phaseolus lunatus* L. seeds. *Biochim. Biophys. Acta*, 1292 (1996) 15-22.
- 1148 Sultana, S., Ryley, H.C. and Duerden, B.I.: Typing of 143 isolates from 10 species of *Bacteroides* by sodium dodecyl sulfate-polyacrylamide gel electrophoresis of whole-cell proteins. *Clin. Infect. Dis.*, 20(Suppl. 2) (1995) S320-S322; C.A., 123 (1995) 192780g.
- 1149 Tikkanen, K., Haataja, S., Francois-Gerard, C. and Finne, J.: Purification of a galactosyl- $\alpha$ 1-4-galactose-binding adhesin from the gram-positive meningitis-associated bacterium *Streptococcus suis*. *J. Biol. Chem.*, 270 (1995) 28874-28878.
- 1150 Van Wijk, K.J., Bingsmark, S., Aro, E.-M. and Andersson, B.: *In vitro* synthesis and assembly of photosystem II core proteins. The D1 protein can be incorporated into photosystem II in isolated chloroplasts and thylakoids. *J. Biol. Chem.*, 270 (1995) 25685-25695.
- 1151 Zhang, X., Yang, X. and Dong, Y.: (Genetic analysis of wheat germ plasm by acid polyacrylamide gel electrophoresis of gliadins). *Zhongguo Nongye Kexue (Beijing)*, 28 (1995) 25-32; C.A., 123 (1995) 250472w.
- See also 1046, 1069, 1123.
- 19e. *Proteins of blood, serum and blood cells*
- 1152 Berger, B.J., Bendrat, K. and Cerami, A.: High-performance liquid chromatographic analysis of biological and chemical heme polymerization. *Anal. Biochem.*, 231 (1995) 151-156.
- 1153 Borkow, G., Gutierrez, J.M. and Ovadia, M.: Isolation, characterization and mode of neutralization of a potent antihemorrhagic factor from the serum of the snake *Bothrops asper*. *Biochim. Biophys. Acta*, 1245 (1995) 232-238.
- 1154 Earnest, J.P., Santos, G.F., Zuerbig, S. and Fox, J.E.B.: Dystrophin-related protein in the platelet membrane skeleton. Integrin-induced change in detergent-insolubility and cleavage by calpain in aggregating platelets. *J. Biol. Chem.*, 270 (1995) 27259-27265.
- 1155 Frøkiær, H., Sørensen, H., Sørensen, J.C. and Sørensen, S.: Optimization of haptien-protein conjugation by high-performance capillary electrophoresis. *J. Chromatogr. A*, 717 (1995) 75-81.
- 1156 Klausen, N.K. and Kornfelt, T.: Analysis of the glycoforms of human recombinant factor VIIa by capillary electrophoresis and high-performance liquid chromatography. *J. Chromatogr. A*, 718 (1995) 195-202.
- 1157 Klouche, M., Bradwell, A.R., Wilhelm, D. and Kirchner, H.: Subclass typing of IgG paraproteins by immunofixation electrophoresis. *Clin. Chem. (Washington)*, 41 (1995) 1475-1479.
- 1158 Knüver-Hopf, J. and Mohr, H.: Differences between natural and recombinant interleukin-2 revealed by gel electrophoresis and capillary electrophoresis. *J. Chromatogr. A*, 717 (1995) 71-74.
- 1159 Lecomte, E., Herbeth, B., Clerc, G., Khalife, K., Siest, G. and Artur, Y.: Cholesterol content of circulating immune complexes in patients with coronary stenosis and subjects without evidence of atherosclerosis. *Clin. Chem. (Washington)*, 41 (1995) 1526-1531.
- 1160 Martin, L.M.: Antibody fragment separations by capillary zone electrophoresis. *J. Chromatogr. B*, 675 (1996) 17-25.
- 1161 Mori, A., Okubo, K., Kang, D. and Hamasaki, N.: A structural study of the carboxyl terminal region of the human erythrocyte band 3 protein. *J. Biochem. (Tokyo)*, 118 (1995) 1192-1198.
- 1162 Ogino, T. and Okada, S.: Oxidative damage of bovine serum albumin and other enzyme proteins by iron-chelate complexes. *Biochim. Biophys. Acta*, 1245 (1995) 359-365.
- 1163 Plumpton, T.A., Clark, I.M., Plumpton, C., Calvin, J. and Cawston, T.E.: Development of an enzyme-linked immunosorbent assay to measure total TIMP-1 (free TIMP-1 and TIMP-1 in combination with matrix-metalloproteinases) and measurement of TIMP1 and CRP in serum. *Clin. Chim. Acta*, 240 (1995) 137-154.
- 1164 Pritchett, T.J.: Quantitative analysis of monoclonal antibodies using three modes of capillary electrophoresis. *BioPharm (Eugene)*, 8 (1995) 38-45; C.A., 123 (1995) 282801u.
- 1165 Quarino, L., Samples, M., Pietro, D.S., Shaler, R., Orta, A. and Jack, D.: Haptoglobin typing of bloodstains using horizontal discontinuous polyacrylamide gel electrophoresis. *Sci. Justice*, 35 (1995) 213-216; C.A., 124 (1996) 2665y.
- 1166 Shah, G.N., Wong, N.C.N. and Mooradian, A.D.: Age-related changes in apolipoprotein A-I expression. *Biochim. Biophys. Acta*, 1259 (1995) 277-282.
- 1167 Shahinian, S. and Silvius, J.R.: A novel strategy affords high-yield coupling of antibody Fab' fragments to liposomes. *Biochim. Biophys. Acta*, 1239 (1995) 157-167.
- 1168 Wongkham, S., Taketa, K., Liu, M. and Taga, H.: Affinity electrophoretic determination of oligosaccharide specificity of *Butea monosperma* agglutinin. *Electrophoresis (Weinheim)*, 17 (1996) 98-103.
- 1169 Yamaguchi, T., Yamamoto, M. and Kimoto, E.: Release of spectrin-containing vesicles from human erythrocyte ghosts by dimyristoylphosphatidylcholine. *J. Biochem. (Tokyo)*, 119 (1996) 95-99.
- See also 979, 983, 1010, 1071, 1111, 1240.
- 19f. *Structural and muscle proteins*
- 1170 Andreev, O.A. and Borejdo, J.: Binding of heavy-chain and essential light-chain 1 of S1 to actin depends on the degree of saturation of F-actin filaments with S1. *Biochemistry*, 34 (1995) 14829-14833.
- 1171 Blough, E.R., Rennie, E.R., Zhang, F. and Reiser, P.J.: Enhanced electrophoretic separation and resolution of myosin heavy chains in mammalian and avian skeletal muscle. *Anal. Biochem.*, 233 (1996) 31-35.
- 1172 Crockford, T. and Johnston, I.A.: Isolation of unstable myosins and the analysis of light chains by capillary electrophoresis. *Anal. Biochem.*, 231 (1995) 20-26.
- 1173 Dos Remedios, C.G., Berry, D.A., Carter, L.K., Coumans, J.V.F., Heinke, M.Y., Kiesling, P.C., Seeto, R.K., Thorvaldson, T., Trahair, T., Yeoh, T., et al.: Different electrophoretic techniques produce conflicting data in the analysis of myocardial samples from dilated cardiomyopathy patients: protein levels do not necessarily reflect mRNA levels. *Electrophoresis (Weinheim)*, 17 (1996) 235-238.
- 1174 Efimova, N.N. and Borovikov, Yu.S.: (Effect of myosin regulatory light chain phosphorylation and ionic strength on actin-myosin interaction at relaxation of a skeletal muscle). *Biokhimiya (Moscow)*, 60 (1995) 1799-1802.

- 1175 Ehrlich, A., Barnett, V.A., Chen, H.-C. and Schoenberg, M.: The site and stoichiometry of the N-phenylmaleimide reaction with myosin when weakly-binding crossbridges are formed in skinned rabbit psoas fibers. *Biochim. Biophys. Acta*, 1232 (1995) 13-20.
- 1176 Ershova, E.S., Kovalev, L.I. and Shishkin, S.S.: (An express method for semipreparative isolation of highly purified proteins from human myocardium by fractionation of extracts with two-dimensional electrophoresis). *Biotehnologiya*, (1994) 17-19; C.A., 123 (1995) 309766a.
- 1177 Hajos, G., Matrai, B., Szerdahelyi, E. and Orsi, F.: Differences in the electrophoretic patterns of soluble pork proteins as a consequence of pig rearing conditions. *Meat Sci.*, 41 (1995) 77-87; C.A., 123 (1995) 255037t.
- 1178 Hattori, A., Wakamatsu, J.-i., Ishii, T., Kuwahara, K. and Tatsumi, R.: A novel 550-kDa protein in skeletal muscle of chick embryo: purification and localization. *Biochim. Biophys. Acta*, 1245 (1995) 191-200.
- 1179 Hattori, A., Wakamatsu, J.-i., Ishii, T., Kuwahara, K. and Tatsumi, R.: Characterization of a novel 550-kDa protein in skeletal muscle of chick embryo. *Biochim. Biophys. Acta*, 1245 (1995) 201-206.
- 1180 Herbert, B.R., Chapman, A.L.P. and Rankin, D.A.: Investigation of wool protein heterogeneity using two-dimensional electrophoresis with immobilised pH gradients. *Electrophoresis (Weinheim)*, 17 (1996) 239-243.
- 1181 Hori, K., Morita, F., Matsuzawa, F. and Aikawa, S.: Actin-actin contact: chemical cross-linking between actin and the 2.6-kDa peptide from subdomain 4 of actin. *J. Biochem. (Tokyo)*, 118 (1995) 1232-1238.
- 1182 Hozumi, T., Miki, M. and Higashi-Fujime, S.: Maleimidobenzoyl actin: its biochemical properties and *in vitro* motility. *J. Biochem. (Tokyo)*, 119 (1996) 151-156.
- 1183 Huidobro, A. and Tejada, M.: (Alteration of the electrophoretic pattern of myofibrillar proteins in fish mince during frozen storage). *Z. Lebensm.-Unters. Forsch.*, 200 (1995) 247-251; C.A., 123 (1995) 226390x.
- 1184 King, L., Jiang, M.J., Huang, T.-S. and Sheu, G.-C.: Protease-susceptible sites and properties of fragments of aortic smooth-muscle myosin. *Biochem. J.*, 312 (1995) 511-518.
- 1185 Kleman, J.-P., Aeschlimann, D., Paulson, M. and van der Rest, M.: Transglutaminase-catalyzed cross-linking of fibrils of collagen V/XI in A204 rhabdomyosarcoma cells. *Biochemistry*, 34 (1995) 13768-13775.
- 1186 Kumar, C.C., Kim, J.-H., Bushel, P., Armstrong, L. and Catino, J.J.: Activation of smooth muscle  $\alpha$ -actin promoter in ras-transformed cells by treatments with antimitotic agents: correlation with stimulation of SRF-SRE mediated gene transcription. *J. Biochem. (Tokyo)*, 118 (1995) 1285-1292.
- 1187 Kunori, S., Katoh, T., Mogi, Y. and Morita, F.: Crosslinking of a 28-residue N-terminal peptide of actin to myosin subfragment 1. *J. Biochem. (Tokyo)*, 118 (1995) 1239-1247.
- 1188 Matsui, C., Wang, C.K., Nelson, C.F., Bauer, E.A. and Hoeffler, W.K.: The assembly of laminin-5 subunits. *J. Biol. Chem.*, 270 (1995) 23496-23503.
- 1189 Okamoto, O., Suzuki, Y., Kimura, S. and Shinkai, H.: Extracellular matrix 22-kDa protein interacts with decorin core protein and is expressed in cutaneous fibrosis. *J. Biochem. (Tokyo)*, 119 (1996) 106-114.
- 1190 Pocock, A.E., Francis, M.J.O. and Smith, R.: Type I collagen synthesis by skin fibroblasts from 17 patients with osteogenesis imperfecta type III. *Clin. Chim. Acta*, 243 (1995) 53-72.
- See also 1068, 1070, 1074, 1576.
- 19g. Protamines, histones and other nuclear proteins**
- 1191 Bartolomé, S., Bermúdez, A. and Daban, J.-R.: Electrophoresis of chromatin on nondenaturing agarose gels containing Mg<sup>2+</sup>. Self-assembly of small chromatin fragments and folding of the 30-nm fiber. *J. Biol. Chem.*, 270 (1995) 22514-22521.
- 1192 Campoy, F.J., Meehen, R.R., McKay, S., Nixon, J. and Bird, A.: Binding of histone H1 to DNA is indifferent to methylation at CpG sequences. *J. Biol. Chem.*, 270 (1995) 26473-26481.
- 1193 Honoré, B., Rasmussen, H.H., Vorum, H., Dejgaard, K., Liu, X., Gromov, P., Madsen, P., Gesser, B., Tommerup, N. and Cells, J.E.: Heterogenous nuclear ribonucleoproteins H, H', and F are members of a ubiquitously expressed subfamily of related but distinct proteins encoded by genes mapping to different chromosomes. *J. Biol. Chem.*, 270 (1995) 28780-28789.
- 1194 Rabilloud, T., Girardot, V. and Lawrence, J.-J.: One- and two-dimensional histone separations in acidic gels: usefulness of methylene blue-driven photopolymerization. *Electrophoresis (Weinheim)*, 17 (1996) 67-73.
- 1195 Rocchini, C., Zhang, F. and Ausio, J.: Two highly specialized histone H1 proteins are the major chromosomal proteins of the sperm of the sea anemone *Urticina (Tealia) crassicornis*. *Biochemistry*, 34 (1995) 15704-15712.
- 1196 Shimizu, M., Miyake, M., Kanke, F., Matsumoto, U. and Shindo, H.: Characterization of the binding of HU and IHF, homologous histone-like proteins of *Escherichia coli*, to curved and uncurved DNA. *Biochim. Biophys. Acta*, 1264 (1995) 330-336.
- 1197 Takami, Y., Takeda, S. and Nakayama, T.: Targeted disruption of H2B-V encoding a particular H2B histone variant causes changes in protein patterns on two-dimensional polyacrylamide gel electrophoresis in the DT40 chicken B cell line. *J. Biol. Chem.*, 270 (1995) 30664-30670.
- See also 1105.
- 19h. Chromoproteins and metalloproteins**
- 1198 Jenney, F.E., Jr., Prince, R.C. and Daldal, F.: The membrane-bound cytochrome c<sub>1</sub> of *Rhodobacter capsulatus* can serve as an electron donor to the photosynthetic reaction center of *Rhodobacter sphaeroides*. *Biochim. Biophys. Acta*, 1273 (1996) 159-164.
- 1199 Lillard, S.J., Yeung, E.S., Lautamo, R.M.A. and Mao, D.T.: Separation of hemoglobin variants in single human erythrocytes by capillary electrophoresis with laser-induced native fluorescence detection. *J. Chromatogr. A*, 718 (1995) 397-404.
- 1200 Richards, M.P., Andrews, G.K., Winge, D.R. and Beattie, J.H.: Separation of three mouse metallothionein isoforms by free-solution capillary electrophoresis. *J. Chromatogr. B*, 675 (1996) 327-331.

1201 Soucek, P., Martin, M.V., Ueng, Y. and Guengerich, F.P.: Identification of a common cytochrome P450 epitope near the conserved heme-binding peptide with antibodies raised against recombinant cytochrome P450 family 2 proteins. *Biochemistry*, 34 (1995) 16013-16021.

1202 Thorsteinsson, M.V., Bevan, D.R., Ebel, R.E., Weber, R.E. and Potts, M.: Spectroscopical and functional characterization of the hemoglobin of *Nostoc commune* UTEX 584 (Cyanobacteria). *Biochim. Biophys. Acta*, 1292 (1996) 133-139.

1203 Wang, H.P. and Safarian, Z.: Quantitative analysis of glycosylated hemoglobin by immunocapillary electrophoresis. U.S. US 5,431,793 (Cl. 204-182.8; C25B7/00), 11 Jul. 1995, Appl. 283,137, 29 Jul. 1994; 13 pp.; C.A., 123 (1995) 193048m.

See also 847, 1128.

19i. *Proteins of glands, gland products, various zymogens (incl. milk proteins)*

1204 Atoda, H., Ishikawa, M., Yoshihara, E., Sekiya, F. and Morita, T.: Blood coagulation factor IX-binding protein from the venom of *Trimeresurus flavoviridis*: purification and characterization. *J. Biochem. (Tokyo)*, 118 (1995) 965-973.

1205 Bedi, G.S. and Bedi, S.K.: Purification and characterization of rat parotid glycosylated, basic and acidic proline-rich proteins. *Prepar. Biochem.*, 25 (1995) 119-132.

1206 Cattaneo, T.M.P., Nigro, F., Toppino, P.M. and Denti, V.: Characterization of ewe's milk by capillary zone electrophoresis. *J. Chromatogr. A*, 721 (1996) 345-349.

1207 Depertthes, D., Chapdelaine, P., Trembaly, R.R., Brunet, C., Berthon, J., Hébert, J., Lazure, C. and Dubé, J.Y.: Isolation of prostatic kallikrein hK2, also known as hGK-1, in human seminal plasma. *Biochim. Biophys. Acta*, 1245 (1995) 311-316.

1208 Matsumura, Y., Chanyongvorakul, Y., Kumazawa, Y., Ohtsuka, T. and Mori, T.: Enhanced susceptibility to transglutaminase reaction of  $\alpha$ -lactalbumin in the molten globule state. *Biochim. Biophys. Acta*, 1292 (1996) 69-76.

1209 Mohan, J., Saini, M. and Joshi, P.: Isolation of a spermatozoa motility inhibiting factor from chicken seminal plasma with antibacterial property. *Biochim. Biophys. Acta*, 1245 (1995) 407-413.

1210 Newman, F., Beeley, J.A. and McFarlane, T.W.: Adherence of oral microorganisms to human parotid salivary proteins. *Electrophoresis (Weinheim)*, 17 (1996) 266-270.

1211 Roth, U., Schönfeld, G., Schröder, B. and Schrattenholz, A.: Membrane protein subunit fractionation by means of inverse pore gradient elution polycrylamide gel electrophoresis. *Anal. Biochem.*, 233 (1996) 67-70.

1212 Schwartz, S.S., Zhu, W.X. and Sreebny, L.M.: Sodium dodecyl sulfate-polycrylamide gel electrophoresis of human whole saliva. *Arch. Oral Biol.*, 40 (1995) 949-958; C.A., 124 (1996) 25075v.

1213 Witzmann, F.A., Fultz, C. and Lipscomb, J.: Comparative 2D-electrophoretic mapping of human and rodent hepatic stress proteins as potential biomarkers. *Appl. Theor. Electrophor.*, 5 (1995) 113-117; C.A., 124 (1996) 25091x.

1214 Witzmann, F.A., Fultz, C.D. and Lipscomb, J.C.: Toxicant-induced alterations in two-dimensional electrophoretic patterns of hepatic and renal stress proteins. *Electrophoresis (Weinheim)*, 17 (1996) 198-202.

1215 Zhang, J., Wang, Q. and Zhou, X.: (A comparison by three types of electrophoresis of scorpion venoms of *Buthus martensi* Karsch from different regions in China). *Tianran Chanwu Yanjiu Yu Kaifa*, 7 (1995) 38-43; C.A., 123 (1995) 248890n.

See also 980, 987, 1073, 1085, 1103, 1124, 1227.

19j. *Proteins of brain, cerebrospinal fluid and eye*

1216 Chen, J. and Rasenick, M.M.: Chronic antidepressant treatment facilitates G protein activation of adenylyl cyclase without altering G protein content. *J. Pharmacol. Exp. Ther.*, 275 (1995) 509-517.

1217 Karki, S. and Holzbaur, E.L.F.: Affinity chromatography demonstrates a direct binding between cytoplasmic dynein and the dynactin complex. *J. Biol. Chem.*, 270 (1995) 28806-28811.

1218 Miyaoka, T., Tsuchiya, M., Hara, N., Ishino, H. and Shimoyama, M.: Activation of *Clostridium botulinum* C3 exoenzyme-catalyzed ADP-ribosylation of RhoA by K<sup>+</sup> in a Mg<sup>2+</sup>-dependent manner. *J. Biochem. (Tokyo)*, 119 (1996) 200-207.

1219 Prasad, K., Barouch, W., Martin, B.M., Greene, L.E. and Eisenberg, E.: Purification of a new clathrin assembly protein from bovine brain coated vesicles and its identification as myelin basic protein. *J. Biol. Chem.*, 270 (1995) 30551-30556.

1220 Rao, P.V., Huang, Q.-I., Horwitz, J. and Zigler, J.S., Jr.: Evidence that  $\alpha$ -crystallin prevents non-specific protein aggregation in the intact eye lens. *Biochim. Biophys. Acta*, 1245 (1995) 439-447.

1221 Yamamoto, H., Hasegawa, M., Ono, T., Tashima, K., Ihara, Y. and Miyamoto, E.: Dephosphorylation of fetal-tau and paired helical filaments-tau by protein phosphatases 1 and 2A and calcineurin. *J. Biochem. (Tokyo)*, 118 (1995) 1224-1231.

See also 990.

19k. *Proteins of neoplastic tissue and transformed cells*

1222 Friedrichs, K., Franke, F., Lisboa, B.-W., Kügler, G., Gille, I., Terpe, H.-J., Hözel, F., Maass, H. and Günthert, U.: CD44 Isoforms correlate with cellular differentiation but not with prognosis in human breast cancer. *Cancer Res.*, 55 (1995) 5424-5433.

1223 Kishida, T., Stackhouse, T.M., Chen, F., Lerman, M.I. and Zbar, B.: Cellular proteins that bind the von Hippel-Lindau disease gene product: mapping of binding domains and the effect of missense mutations. *Cancer Res.*, 55 (1995) 4544-4548.

1224 Packard, B.Z., Lee, S.S., Remold-O'Donnell, E. and Komoriya, A.: A serpin from human tumor cells with direct lymphoid immunomodulatory activity: mitogenic stimulation of human tumor-infiltrating lymphocytes. *Biochim. Biophys. Acta*, 1269 (1995) 41-50.

See also 1127.

19l. *Specific binding and receptor proteins*

1225 Da Costa, M. and Rothenberg, S.P.: Purification and characterization of folate binding proteins from rat placenta. *Biochim. Biophys. Acta*, 1292 (1996) 23-30.

- 1226 Dransfield, D.T., Bradford, A.J. and Goldenring, J.R.: Distribution of A-kinase anchoring proteins in parietal cells. *Biochim. Biophys. Acta*, 1269 (1995) 215-220.
- 1227 Fedosov, S.N., Petersen, T.E. and Nexø, E.: Transcobalamin from cow milk: isolation and physico-chemical properties. *Biochim. Biophys. Acta*, 1292 (1996) 113-119.
- 1228 Graham, J.D., Yeates, C., Balleine, R.L., Harvey, S.S., Milliken, J.S., Bilous, A.M. and Clarke, C.L.: Characterization of progesterone receptor A and B expression in human breast cancer. *Cancer Res.*, 55 (1995) 5063-5068.
- 1229 Hilton, M., Spenser, D.C., Ross, P., Ramsey, A. and McArdle, H.J.: Characterisation of the copper uptake mechanism and isolation of the ceruloplasmin receptor/copper transporter in human placental vesicles. *Biochim. Biophys. Acta*, 1245 (1995) 153-160.
- 1230 Honda, G., Masaki, C., Zushi, M., Tsuruta, K., Sata, M., Mohri, M., Gomi, K., Kondo, S. and Yamamoto, S.: The roles played by the D2 and D3 domains of recombinant human thrombomodulin in its function. *J. Biochem. (Tokyo)*, 118 (1995) 1030-1036.
- 1231 Hosomii, O., Takeya, A., Kogure, T., Iwai, H. and Yazawa, S.: Identification and purification of a novel phospholipid/ganglioside-binding protein in rabbit serum. *Biochim. Biophys. Acta*, 1259 (1995) 18-22.
- 1232 Huang, W. and Bateman, E.: Cloning, expression, and characterization of the TATA-binding protein (TBP) promoter binding factor, a transcription activator of the *Acanthamoeba* TBP gene. *J. Biol. Chem.*, 270 (1995) 28839-28847.
- 1233 Klinghoffer, R.A. and Kazlauskas, A.: Identification of a putative Syp substrate, the PDGF $\beta$  receptor. *J. Biol. Chem.*, 270 (1995) 22208-22217.
- 1234 Koike, T., Beppu, H., Kuzuya, H., Maruta, K., Shimpo, K., Suzuki, M., Titani, K. and Fujita, K.: A 35 kDa mannose-binding lectin with hemagglutinating and mitogenic activities from "Kidachi Aloe" (*Aloe arborescens* Miller var. *natalensis* Berger). *J. Biochem. (Tokyo)*, 118 (1995) 1205-1210.
- 1235 Kudo, Y., Itatsu, S., Iwashita, M., Iguchi, T. and Takeda, Y.: Effects of estrogen and parathyroid hormone on osteoblastic activity via regulating the binding activity of insulin-like growth factor binding protein-4 in SaOS-2 cells: implications for the pathogenesis of postmenopausal osteoporosis. *Biochim. Biophys. Acta*, 1245 (1995) 402-406.
- 1236 Kuil, C.W., Berrevoets, C.A. and Mulder, E.: Ligand-induced conformational alterations of the androgen receptor analyzed by limited trypsinization. Studies on the mechanism of anti-androgen action. *J. Biol. Chem.*, 270 (1995) 27569-27576.
- 1237 Melrose, J., Numata, Y. and Ghosh, P.: Biotinylated hyaluronan: a versatile and highly sensitive probe capable of detecting nanogram levels of hyaluronan binding proteins (hyaladherins) on electroblots by a novel affinity detection procedure. *Electrophoresis (Weinheim)*, 17 (1996) 205-212.
- 1238 Mondino, A. and Jenkins, M.K.: Accumulation of sequence-specific RNA-binding proteins in the cytosol of activated T cells undergoing RNA degradation and apoptosis. *J. Biol. Chem.*, 270 (1995) 26593-26601.
- 1239 Ohtsuki, K., Nakamura, S., Shimoyama, Y., Shibata, D., Munakata, H., Yoshiki, Y. and Okubo, K.: A 96-kDa glycyrrhizin-binding protein (gp96) from soybeans acts as a substrate for casein kinase II, and is highly related to lipoxygenase 3. *J. Biochem. (Tokyo)*, 118 (1995) 1145-1150.
- 1240 Sakai, K., Fujii, T. and Hayashi, T.: Conformational change precedes the formation of multimeric fibronectin. *J. Biochem. (Tokyo)*, 119 (1996) 58-62.
- 1241 Singh, U.S., Erikson, J.W. and Cerione, R.A.: Identification and biochemical characterization of an 80 kilodalton GTP-binding/transglutaminase from rabbit liver nuclei. *Biochemistry*, 34 (1995) 15863-15871.
- 1242 Yu, C., Warriar, N. and Govindan, M.V.: Cysteines 638 and 665 in the hormone binding domain of human glucocorticoid receptor define the specificity to glucocorticoids. *Biochemistry*, 34 (1995) 14163-14173.
- 1243 Zeng, H., Yoshida, T., Kurosaki, T., Yamamura, H., Oshima, A., Kitamura, D., Watanabe, T. and Morikawa, M.: Phosphorylation of HS1, GAP-associated p190 and a novel GAP-associated p60 protein by cross-linking of Fc $\gamma$ RIIA. *J. Biochem. (Tokyo)*, 118 (1995) 1166-1174.

See also 1065, 1072, 1095, 1248, 1375.

#### 19m. Urinary proteins

- 1244 Calero, M., Escribano, J., Soriano, F., Grubb, A., Brew, K. and Méndez, E.: Spectroscopic characterization by photodiode array detection of human urinary and amniotic protein HC subpopulations fractionated by anion-exchange and size-exclusion high-performance liquid chromatography. *J. Chromatogr. A*, 719 (1996) 149-157.
- 1245 Ueda, Y., Nagasawa, K., Tsukamoto, H., Horiuchi, T., Yoshizawa, S., Tsuru, T., Furugo, I. and Niho, Y.: Urinary C4 excretion in systemic lupus erythematosus. *Clin. Chim. Acta*, 243 (1995) 11-23.

#### 19n. Other proteins (incl. proteinous inhibitors of enzymic activity)

- 1246 Agarwala, K.L., Kawabata, S.-i., Hirata, M., Miyagi, M., Tsunashima, S. and Iwanaga, S.: A cysteine protease inhibitor stored in the large granules of horseshoe crab hemocytes: purification, characterization, cDNA cloning and tissue localization. *J. Biochem. (Tokyo)*, 119 (1996) 85-94.
- 1247 Eto, M., Ohmori, T., Suzuki, M., Furuya, K. and Morita, F.: A novel protein phosphatase-1 inhibitory protein potentiated by protein kinase C. Isolation from porcine aorta media and characterization. *J. Biochem. (Tokyo)*, 118 (1995) 1104-1107.
- 1248 Kramer, R., Pomerantz, K.B., Kesav, S., Scallen, T.J. and Hajjar, D.P.: Cholesterol enrichment enhances expression of sterol-carrier protein-2: implication for its function in intracellular cholesterol trafficking. *J. Lipid Res.*, 36 (1995) 2630-2638.
- 1249 Rodgers, K.J., Melrose, J. and Ghosh, P.: Biotinylated trypsin and its application as a sensitive, versatile probe for the detection and characterisation of an ovine chondrocyte serine proteinase inhibitor using Western blotting. *Electrophoresis (Weinheim)*, 17 (1996) 213-218.
- 1250 Wassler, M., Esnard, F. and Fries, E.: Posttranslational folding of  $\alpha_1$ -inhibitor 3. Evidence for a compaction process. *J. Biol. Chem.*, 270 (1995) 24598-24603.
- 1251 Wouters, F.S., Markman, M., de Graaf, P., Hauser, H., Tabak, H.F., Wirtz, K.W.A. and Moorman, A.F.M.: The immunohistochemical localization of the non-specific lipid transfer protein (sterol carrier protein-2) in rat small intestine enterocytes. *Biochim. Biophys. Acta*, 1259 (1995) 192-196.

See also 982, 1066, 1103, 1173, 1214.

## 20. ENZYMES AND ENZYME ACTIVITY ESTIMATION

- 1252 Snabel, V.: On some problems of electrophoretic methods used in isoenzyme analysis. *Helminthologia*, 32 (1995) 29-31; C.A., 123 (1995) 309138x.
- 20a. *Oxidoreductases*
- 1253 Brown, A.-M., Benoubetra, M., Ellison, M., Powell, D., Reckless, J.D. and Harrison, R.: Molecular activation-deactivation of xanthine oxidase in human milk. *Biochim. Biophys. Acta*, 1245 (1995) 248-254.
- 1254 Hayashi, M., Ohzeki, H., Shimada, H. and Unemoto, T.: NADPH-specific quinone reductase is induced by 2-methylene-4-butyrolactone in *Escherichia coli*. *Biochim. Biophys. Acta*, 1273 (1996) 165-170.
- 1255 Kim, C.-K., Jeon, K.-I., Lim, D.-M., Johng, T.-N., Trzaskos, J.M., Gaylor, J.L. and Paik, Y.-K.: Cholesterol biosynthesis from lanosterol: regulation and purification of rat hepatic sterol 14-reductase. *Biochim. Biophys. Acta*, 1259 (1995) 39-48.
- 1256 Kohno, H., Furukawa, T., Tokunaga, R., Taketani, S. and Yoshinaga, T.: Mouse coproporphyrinogen oxidase is a copper-containing enzyme: expression in *Escherichia coli* and site-directed mutagenesis. *Biochim. Biophys. Acta*, 1292 (1996) 156-162.
- 1257 Kusano, T., Kuge, S., Sakamoto, J., Noguchi, S. and Sone, N.: Nucleotide and amino acid sequences for cytochrome caa<sub>3</sub>-type oxidase of *Bacillus stearothermophilus* K1041 and non-Michaelis-type kinetics with cytochrome c. *Biochim. Biophys. Acta*, 1273 (1996) 129-138.
- 1258 Labrou, N.E. and Clonis, Y.D.: Biomimetic dye affinity chromatography for the purification of bovine heart lactate dehydrogenase. *J. Chromatogr. A*, 718 (1995) 35-44.
- 1259 Popova, T.N. and Podoprigora, A.Yu.: (Catalytic properties of NAD-dependent isocitrate dehydrogenase from pumpkin cotyledons). *Biokhimiya (Moscow)*, 60 (1995) 1790-1798.
- 1260 Song, X., Zhu, H.-q. and Xing, J.: (The peroxidase isoenzyme isoelectrofocusing electrophoresis analysis of cotton leave). *Zhiwu Shenglixue Tongxun*, 31 (1995) 45-48; C.A., 123 (1995) 251254p.
- 1261 Soukri, A., Hafid, N., Valverde, F., Elkebbaj, M.S. and Serrano, A.: Evidence for a posttranslational covalent modification of liver glyceraldehyde-3-phosphate dehydrogenase in hibernating jerboa (*Jaculus orientalis*). *Biochim. Biophys. Acta*, 1292 (1996) 177-187.
- 1262 Tachibana, M., Sasai, K., Okubo, A. and Yamazaki, S.: (Substrate specificity of dimethyl sulfoxide reductase as proved by micellar electrokinetic chromatography). *Bunseki Kagaku*, 44 (1995) 809-813; C.A., 123 (1995) 333474z.
- 1263 Tibell, L.A.E., Skärstad, E. and Jonsson, B.-H.: Determination of the structural role of the N-terminal domain of human extracellular superoxide dismutase by use of protein fusions. *Biochim. Biophys. Acta*, 1292 (1996) 47-52.
- 1264 Yasumoto, K.-i., Mahalingam, H., Suzuki, H., Yoshizawa, M., Yokoyama, K. and Shibahara, S.: Transcriptional activation of the melanocyte-specific genes by the human homolog of the mouse *Microphthalmia* protein. *J. Biochem. (Tokyo)*, 118 (1995) 874-881.
- See also 1366.
- 20b. *Transferases (excl. E.C. 2.7.-.)*
- 1265 Bunnak, J., Hamana, H., Ogino, Y., Saheki, T., Yamagishi, A., Oshima, T., Date, T. and Shinozawa, T.: Orotate phosphoribosyltransferase from *Thermus thermophilus*: overexpression in *Escherichia coli*, purification and characterization. *J. Biochem. (Tokyo)*, 118 (1995) 1261-1267.
- 1266 Fedorova, M.Yu., Borisov, A.Yu., Tsyganov, V.E., Rozov, S.M., Filatov, A.A. and Tikhonovich, I.A.: (Genetic determination of a nodule-stimulated aspartate aminotransferase (AAT-2) isoenzyme in pea (*Pisum sativum* L.)). *Genetika (Moscow)*, 30 (1994) 1495-5000; C.A., 123 (1995) 193893h.
- 1267 Garcia, R., Rodriguez, R., Montesino, R., Besada, V., Gonzalez, J. and Cremata, J.A.: Concanavalin A- and wheat gern agglutinin-conjugated lectins as a tool for the identification of multiple N-glycosylation sites in heterologous protein expressed in yeast. *Anal. Biochem.*, 231 (1995) 342-348.
- 1268 Hashimoto, W., Suzuki, H., Nohara, S., Tachi, H., Yamamoto, K. and Kumagai, H.: Subunit association of  $\gamma$ -glutamyltranspeptidase of *Escherichia coli* K-12. *J. Biochem. (Tokyo)*, 118 (1995) 1216-1223.
- 1269 Lagueux, J., Ménard, L., Candas, B., Brochu, G., Potvin, F., Verreault, A., Cook, P.F. and Poirier, G.G.: Equilibrium model in an *in vitro* poly(ADP-ribose) turnover system. *Biochim. Biophys. Acta*, 1264 (1995) 201-208.
- 1270 Müller, W.H., Essers, J., Humbel, B.M. and Verkleij, A.J.: Enrichment of *Penicillium chrysogenum* microbodies by isopycnic centrifugation in nycodenz as visualized with immuno-electron microscopy. *Biochim. Biophys. Acta*, 1245 (1995) 215-220.
- 1271 Shin, Y., Sawada, K., Nagakura, T., Miyanaga, M., Moritani, C., Noumi, T., Tsuchiya, T. and Kanazawa, H.: Reconstitution of the F<sub>1</sub>-ATPase activity from purified  $\alpha$ ,  $\beta$ ,  $\gamma$  and  $\delta$  or  $\epsilon$  subunits with glutathione S-transferase fused at their amino termini. *Biochim. Biophys. Acta*, 1273 (1996) 62-70.
- 1272 Takaku, K., Futamura, M., Saitoh, S. and Takeuchi, Y.: Tissue-type transglutaminase is not a tumor-related marker. *J. Biochem. (Tokyo)*, 118 (1995) 1268-1270.
- 1273 Yamada, S., Tanaka, Y. and Furuichi, M.: Partial purification and characterization of histidine acetyltransferase in brain of Nile tilapia (*Oreochromis niloticus*). *Biochim. Biophys. Acta*, 1245 (1995) 239-247.
- See also 1066.
- 20c. *Transferases transferring phosphorus containing groups (E.C. 2.7.-.)*
- 1274 Fiorani, M., Cantoni, O., Tasinato, A., Boscoboinik, D. and Azzi, A.: Hydrogen peroxide-and fetal bovine serum-induced DNA synthesis in vascular smooth muscle cells: positive and negative regulation by protein kinase C isoforms. *Biochim. Biophys. Acta*, 1269 (1995) 98-104.

- 1275 Kikuchi, H. and Imajoh-Ohmi, S.: Antibodies specific for proteolyzed forms of protein kinase C  $\alpha$ . *Biochim. Biophys. Acta*, 1269 (1995) 253-259.
- 1276 Litchfield, D.W., Bosc, D.G. and Slominski, E.: The protein kinase from mitotic human cells that phosphorylates Ser-209 on the casein kinase II  $\beta$ -subunit is p34 $^{cdc}2$ . *Biochim. Biophys. Acta*, 1269 (1995) 69-78.
- 1277 Liu, L., Cutler, R.L. and Krystal, G.: Identification and characterization of an interleukin-3 receptor-associated 110-kDa serine/threonine kinase. *J. Biol. Chem.*, 270 (1995) 224222-22427.
- 1278 Nadano, D., Yasuda, T., Sawazaki, K., Takeshita, H. and Kishi, K.: pH Gradient electrophoresis of basic ribonucleases in sealed slab polyacrylamide gels: detection and inhibition of enzyme activity in the gel. *Electrophoresis (Weinheim)*, 17 (1996) 104-109.
- 1279 Nesterova, M., Yokozaki, H., McDuffie, E. and Cho-Chung, Y.S.: Overexpression of RII $\beta$  regulatory subunit of protein kinase A in human colon carcinoma cell induces growth arrest and phenotypic changes that are abolished by site-direct mutation of RII $\beta$ . *Eur. J. Biochem.*, 235 (1996) 486-494.
- 1280 Olson, M.W., Wang, Y., Elder, R.H. and Kaguni, L.S.: Subunit structure of mitochondrial DNA polymerase from *Drosophila* embryos. Physical and immunological studies. *J. Biol. Chem.*, 270 (1995) 28932-28937.
- 20d. *Hydrolases, acting on ester bonds (E.C. 3.1.-.)*
- 1281 Burridge, K. and Nelson, A.: An in-gel assay for protein tyrosine phosphatase activity: detection of widespread distribution in cells and tissues. *Anal. Biochem.*, 232 (1995) 56-64.
- 1282 Chen, X., Gresham, A., Morrison, A. and Pentland, A.P.: Oxidative stress mediates synthesis of cytosolic phospholipase A<sub>2</sub> after UVB injury. *Biochim. Biophys. Acta*, 1299 (1996) 23-33.
- 1283 Clery, C., Bec, N., Balny, C., Mozaev, V.V. and Masson, P.: Kinetics of butyrylcholinesterase in reversed micelles under high pressure. *Biochim. Biophys. Acta*, 1253 (1995) 85-93.
- 1284 Craig, D.B., Wong, J.C.Y. and Dovichi, N.J.: Detection of attomolar concentrations of alkaline phosphatase by capillary electrophoresis using laser-induced fluorescence detection. *Anal. Chem.*, 68 (1996) 697-700.
- 1285 Haag, P., Seibel, M.J., Werle, E. and Ziegler, R.: (Bone specific alkaline phosphatase: Analytical methods and significance in the diagnosis of metabolic bone diseases). *Klin. Labor.*, 41 (1995) 217-227; C.A., 123 (1995) 195236v - a review with 48 refs.
- 1286 Kauppinen, S., Christgau, S., Kofod, L.V., Halkier, T., Dörrech, K. and Dalbøe, H.: Molecular cloning and characterization of a rhamnogalacturonan acylesterase from *Aspergillus aculeatus*. Synergism between rhamnogalacturonan degrading enzymes. *J. Biol. Chem.*, 270 (1995) 27172-27178.
- 1287 Nocito, M., Roy, G., Villar, L.M., Palacios, C., Serrano, A., Alvarez-Cerdeño, J.C. and González-Porqué, P.: Thioesterase and protein deacylase activities of porcine pancreatic phospholipase A<sub>2</sub>. *Biochim. Biophys. Acta*, 1299 (1996) 17-22.
- 1288 Pidgeon, C., Cai, S.J. and Bernal, C.: Mobile phase effects on membrane protein elution during immobilized artificial membrane chromatography. *J. Chromatogr. A*, 721 (1996) 213-230.
- 1289 Sarker, A.H., Watanabe, S., Akiyama, K., Nakagawa, Y., Wakabayashi, H., Tan, Y. and Seki, S.: Purification and characterization of an AP endonuclease/DNA 3'repair diesterase from mouse ascites sarcoma cells. *Biochim. Biophys. Acta*, 1245 (1995) 299-304.
- 1290 Spilburg, C.A., Cox, D.G., Wang, X., Bernat, B.A., Bosner, M.S. and Lange, L.G.: Identification of a species specific regulatory site in human pancreatic cholesterol esterase. *Biochemistry*, 34 (1995) 15532-15538.
- 1291 Takeshita, H., Yasuda, T., Nadano, D., Iida, R. and Kishi, K.: Deoxyribonuclease I from rat urine: affinity purification, characterization, and immunochemical studies. *J. Biochem. (Tokyo)*, 118 (1995) 932-938.
- 1292 Yamazaki, Y., Kageyama, Y.-i. and Okuno, H.: Direct evaluation of stereoselectivity of cancer esterases by polyacrylamide gel electrophoresis coupled with activity staining with chiral naphthyl esters. *Anal. Biochem.*, 231 (1995) 295-300.
- 20e. *Hydrolases, acting on glycosyl compounds (E.C. 3.2.-.)*
- 1293 Khaled, M.Y., McNair, H., Polite, L. and Pauls, R.: Analytical separation of *Trichoderma reesei* cellulases by capillary zone electrophoresis. *J. Microcolumn Sep.*, 7 (1995) 429-433; C.A., 123 (1995) 333462u.
- 1294 Kubo, K.: Variability in heat-induced fragmentation of a protein in the presence of dodecyl sulfate: the role of an intramolecular sulphydryl/disulfide exchange. *J. Biochem. (Tokyo)*, 118 (1995) 1112-1117.
- 1295 Noppe, W., Hanssens, I. and de Cuyper, M.: Simple two-step procedure for the preparation of highly active pure equine milk lysozyme. *J. Chromatogr. A*, 719 (1996) 327-331.
- See also 1076.
- 20f. *Other hydrolases*
- 1296 Bedi, G.S.: Comparative study of four proteases from spent culture media of *Porphyromonas gingivalis* (FAY-19M-1). *Prepar. Biochem.*, 25 (1995) 133-154.
- 1297 Berman, Y.L., Julian, L. and Devi, L.A.: Purification and characterization of a dynorphin-processing endopeptidase. *J. Biol. Chem.*, 270 (1995) 23845-23850.
- 1298 Fricke, B., Buchmann, T. and Friebe, S.: Unusual chromatographic behaviour and one-step purification of a novel membrane proteinase from *Bacillus cereus*. *J. Chromatogr. A*, 715 (1995) 247-258.
- 1299 Garwicz, D., Lindmark, A. and Gullberg, U.: Human cathepsin G lacking functional glycosylation site is proteolytically processed and targeted for storage in granules after transfection to the rat basophilic/mast cell line RBL or the murine myeloid cell line 32d. *J. Biol. Chem.*, 270 (1995) 28413-28418.
- 1300 Hummel, K.M., Penheiter, A.R., Gathman, A.C. and Lilly, W.W.: Anomalous estimation of protease molecular weights using gelatin-containing SDS-PAGE. *Anal. Biochem.*, 233 (1996) 140-142.
- 1301 Kayvani-Amineh, H., Diouri, M., Guillemette, J.G. and Weber, J.M.: Electrophoretic and spectral characterization of wild type and mutant adenovirus protease. *J. Biol. Chem.*, 270 (1995) 23250-23253.

- 1302 Kharbanda, K.K., McVicker, D.L., Zetterman, R.K. and Donohue, T.M., Jr.: Ethanol consumption reduces the proteolytic capacity and protease activities of hepatic lysosomes. *Biochim. Biophys. Acta*, 1245 (1995) 421-429.
- 1303 Kulakovskaya, T.V., Andreeva, N.A., Lichko, L.P. and Kulaev, I.S.: (Immunoassay of polyphosphatases from different compartments of *Saccharomyces cerevisiae* yeast cells). *Biokhimiya (Moscow)*, 60 (1995) 2040-2044.
- 1304 Macdonald, M.H., Morrison, C.J. and McMaster, W.R.: Analysis of the active site and activation mechanism of the *Leishmania* surface metalloproteinase GP63. *Biochim. Biophys. Acta*, 1253 (1995) 199-207.
- 1305 Michaud, D., Cantin, L., Raworth, D.A. and Vrain, T.C.: Assessing the stability of cystatin/cysteine proteinase complexes using mildly-denaturing gelatin-polyacrylamide gel electrophoresis. *Electrophoresis (Weinheim)*, 17 (1996) 74-79.
- 1306 Muraoka, M., Nakazato, K. and Hayashi, T.: Gel formation from the type IV collagen isolated from bovine lens capsule in guanidine-HCl and dithiothreitol. *J. Biochem. (Tokyo)*, 119 (1996) 167-172.
- 1307 Nijtmans, L.G.J., Klement, P., Housteck, J. and van den Bogert, C.: Assembly of mitochondrial ATP synthase in cultured human cells: implications for mitochondrial diseases. *Biochim. Biophys. Acta*, 1272 (1995) 190-198.
- 1308 Okamura, N., Tamba, M., Uchiyama, Y., Sugita, Y., Dacheux, F., Syntin, P. and Dacheux, J.-L.: Direct evidence for the elevated synthesis and secretion of procathepsin L in the distal caput epididymis of boar. *Biochim. Biophys. Acta*, 1245 (1995) 221-226.
- 1309 Raser, K.J., Buroker-Kilgore, M. and Wang, K.K.W.: Binding and aggregation of human  $\mu$ -calpain by terbium ion. *Biochim. Biophys. Acta*, 1292 (1996) 9-14.
- 1310 Resing, K.A., Thulin, C., Whiting, K., Al-Alawi, N. and Mostad, S.: Characterization of profilaggrin endoproteinase 1. A regulated cytoplasmic endoproteinase of epidermis. *J. Biol. Chem.*, 270 (1995) 28193-28198.
- 1311 Takeda, A., Higuchi, D., Yamamoto, T., Nakamura, Y., Masuda, Y., Hirabayashi, T. and Nakaya, K.: Purification and characterization of bleomycin hydrolase, which represents a new family of cysteine proteases, from rat skin. *J. Biochem. (Tokyo)*, 119 (1996) 29-36.
- 1312 Takeshima, H., Sakaguchi, M., Miura, K., Murakami, K., Omura, T., Himeno, M. and Nishimura, Y.: Intracellular targeting of lysosomal cathepsin D in COS cells. *J. Biochem. (Tokyo)*, 118 (1995) 981-988.
- 1313 Tsukuba, T., Sakai, H., Yamada, M., Maeda, H., Hori, H., Azuma, T., Akamine, A. and Yamamoto, K.: Biochemical properties of the monomeric mutant of human cathepsin E expressed in Chinese hamster ovary cells: comparison with dimeric forms of the natural and recombinant cathepsin E. *J. Biochem. (Tokyo)*, 119 (1996) 126-134.

See also 1049, 1089, 1207, 1271, 1281, 1354.

#### 20g. Lyases

- 1314 Luo, J.L., Deka, J. and Lim, C.K.: Determination of 5-amino-laevulinic acid dehydratase activity in erythrocytes and porphobilinogen in urine by micellar electrokinetic capillary chromatography. *J. Chromatogr. A*, 722 (1996) 353-357.

- 1315 Luo, J.L., Deka, J. and Lim, C.K.: Determination of 5-amino-laevulinic acid dehydratase activity in erythrocytes and porphobilinogen in urine by micellar electrokinetic capillary chromatography. In: Hatano, H. and Hanai, T. (Editors), *Int. Symp. Chromatogr., 35th Anniv. Res. Group Liq. Chromatogr. Jpn.*, World Scientific, Singapore, 1995, pp. 179-189; C.A., 123 (1995) 278178d.

See also 1131, 1216.

#### 20h. Isomerases

- 1316 Choi, I.Y., Chung, I.K. and Muller, M.T.: Eukaryotic topoisomerase II cleavage is independent of duplex DNA conformation. *Biochim. Biophys. Acta*, 1264 (1995) 209-214.
- 1317 Kilvington, S.: Identification of *Naegleria fowleri* and other *Naegleria* spp. (free-living amoebae) using cellulose acetate membrane electrophoresis of glucose phosphate isomerase. *FEMS Microbiol. Lett.*, 133 (1995) 219-223; C.A., 123 (1995) 333349n.

See also 1077.

#### 20i. Ligases

- 1318 Tretyakov, O.Yu., Ruzhova, T.A., Velichytina, I.V., Kostikova, T.R., Myasnikov, A.N., Smirnov, M.N. and Domkin, V.D.: (Glycynamide ribonucleotide synthetase [EC 6.3.4.13]-aminoimidazole ribonucleotide synthetase [EC 6.3.3.1] of the yeast *Saccharomyces cerevisiae*). *Biokhimiya (Moscow)*, 60 (1995) 2011-2021.

#### 20j. Complex mixtures and incompletely identified enzymes

- 1319 Guennec, R.L., Reynes, J., Mallie, M., Pujol, C., Janbon, F. and Bastide, J.-M.: Fluconazole- and itraconazole-resistant *Candida albicans* strains from AIDS patients: multilocus enzyme electrophoresis analysis and antifungal susceptibilities. *J. Clin. Microbiol.*, 33 (1995) 2732-2727; C.A., 123 (1995) 334150c.
- 1320 Markova, M., Ancheva, M. and Atanasova, B.: Electrophoretic analysis of enzymes of carbohydrate metabolism in male-sterile tomatoes. *Dokl. Bulg. Akad. Nauk.*, 47 (1994) 77-79; C.A., 123 (1995) 249735c.
- 1321 Shibagaki, Y., Gotoh, H., Kato, M. and Mizumoto, K.: Localization and *in vitro* mutagenesis of the active site in the *Saccharomyces cerevisiae* mRNA capping enzyme. *J. Biochem. (Tokyo)*, 118 (1995) 1303-1309.
- 1322 Yong, Y. and Romano, L.J.: Nucleotide and DNA-induced conformational changes in the bacteriophage T7 gene 4 protein. *J. Biol. Chem.*, 270 (1995) 24509-24517.

See also 1431.

21. PURINES, PYRIMIDINES, NUCLEIC ACIDS AND THEIR CONSTITUENTS
- 21a. *Purines, pyrimidines, nucleosides, nucleotides*
- 1323 Araki, M., Uemura, H., Kishi, J. and Yoshida, H.: Primers and nested PCR for diagnosis of *Chlamydia trachomatis* serum type. *Jpn. Kokai Tokkyo Koho JP 07,255,499 [95,255,499]* (Cl. C12Q1/68), 9 Oct. 1995, Appl. 94/49,116, 18 Mar. 1994; 10 pp.; C.A., 124 (1996) 23318c.
- 1324 Buscher, B.A.P., Tjaden, U.R., Irth, H., Andersson, E.M. and van der Greef, J.: Determination of 1,2,6-inositol triphosphate (derivatives) in plasma using iron(III)-loaded adsorbents and capillary zone electrophoresis-(indirect) UV detection. *J. Chromatogr. A*, 718 (1995) 413-419.
- 1325 Chen, Y. and Yuan, Z.B.: Capillary electrophoresis determination of inosine in some drug formulations using hypoxanthine as internal standard. *Chin. Chem. Lett.*, 6 (1995) 701-704; C.A., 123 (1995) 209023n.
- 1326 Cohen, A.S., Bourque, A. and Vilenchik, M.: Separation of oligonucleotide analogs by high-performance capillary electrophoresis with high concentrations of urea and organic solvent. *PCT Int. Appl. WO 95 18,813* (Cl. C07H1/06), 13 Jul. 1995, US Appl. 178,660, 07 Jan. 1994; 54 pp.; C.A., 123 (1995) 222306b.
- 1327 Crooke, R.M., Graham, M.J., Cooke, M.E. and Crooke, S.T.: *In vitro* pharmacokinetics of phosphorothioate antisense oligonucleotides. *J. Pharmacol. Exp. Ther.*, 275 (1995) 462-473.
- 1328 Day, I.N.M., O'Dell, S.D., Cash, I.D., Humphries, S.E. and Weavind, G.P.: Electrophoresis for genotyping: temporal thermal gradient gel electrophoresis for profiling of oligonucleotide dissociation. *Nucleic Acids Res.*, 23 (1995) 2404-2412; C.A., 123 (1995) 247777u.
- 1329 Hiraoka, A., Kobayashi, M., Takabuchi, T., Akai, J., Arato, T. and Tominaga, I.: Capillary-zone electrophoretic determination of uric acid in cerebrospinal fluid from patients with neuropsychiatric diseases. *Seibutsu Shiryō Bunseki*, 18 (1995) 90-95; C.A., 123 (1995) 334161g.
- 1330 Ju, J., Khetpal, I., Scherer, J.R., Ruan, C., Fuller, C.W., Glazer, A.N. and Mathies, R.A.: Design and synthesis of fluorescence energy transfer dye-labeled primers and their applications for DNA sequencing and analysis. *Anal. Biochem.*, 231 (1995) 131-140.
- 1331 Mishra, R.K., Moreau, C., Ramazeilles, C., Moreau, S., Bonnet, J. and Toulmé, J.-J.: Improved leishmanicidal effect of phosphorothioate antisense oligonucleotides by LDL-mediated delivery. *Biochim. Biophys. Acta*, 1264 (1995) 229-237.
- 1332 Oldenburg, K.R., Vo, K.T., Smith, G.A. and Selick, H.E.: Ionoforetic delivery of oligonucleotides across full thickness hairless mouse skin. *J. Pharm. Sci.*, 84 (1995) 915-921.
- 1333 Paulus, A., Widmer, M. and Gummin, L.L.: (Antisense oligonucleosides in pharmaceutical research and analytical implications). *GIT Fachz. Lab.*, 39 (1995) 627-632; C.A., 123 (1995) 350447k.
- 1334 Penmetsa, K.V., Shea, D., Leidy, R.B. and Bond, J.A.: Analysis of benzo[a]pyrene-DNA adducts by capillary electrophoresis with laser-induced fluorescence detection. *J. High Resolut. Chromatogr.*, 18 (1995) 719-720.
- 1335 Poon, K.W., Mistry, N., Podmore, I.D., Evans, M.D., Herbert, K.E. and Lunec, J.: Micellar electrokinetic capillary chromatography of 8-oxoguanine and other bases of DNA. *Biochem. Soc. Trans.*, 23 (1995) 433s; C.A., 123 (1995) 192825a.
- 1336 Row, K.H.: (Separation of deoxyribonucleotides by capillary zone electrophoresis). *Hwahak Konghak*, 33 (1995) 258-265; C.A., 123 (1995) 217381t.
- 1337 Walker, P.A., III, Kowalchyk, W.K. and Morris, M.D.: On-line Raman spectroscopy of ribonucleotides preconcentrated by capillary isotachophoresis. *Anal. Chem.*, 67 (1995) 4255-4260.
- See also 790, 888, 1492.
- 21b. *Nucleic acids, RNA*
- 1338 Abood, M.E. and Tao, Q.: Characterization of a Delta opioid receptor in rat pheochromocytoma cells. *J. Pharmacol. Exp. Ther.*, 274 (1995) 1566-1573.
- 1339 Aoki, N., Kishi, M., Taniguchi, Y., Adachi, T., Nakamura, R. and Matsuda, T.: Molecular cloning of glycoprotein antigens MGP57/53 recognized by monoclonal antibodies raised against bovine milk fat globule membrane. *Biochim. Biophys. Acta*, 1245 (1995) 385-391.
- 1340 Barnard, G.F., Mori, M., Staniunas, R.J., Begum, N.A., Bao, S., Puder, M., Cobb, J., Redman, K.L., Steele, G.D., Jr. and Chen, L.B.: Ubiquitin fusion proteins are overexpressed in colon cancer but not in gastric cancer. *Biochim. Biophys. Acta*, 1272 (1995) 147-153.
- 1341 Bos, P., Kirsten, M., Cronje, R.E. and Steele, A.D.: Monitoring of rotavirus infection in a pediatric hospital by RNA electrophoresis. *SAMJ*, 85 (1995) 887-891; C.A., 123 (1995) 250470u.
- 1342 Diczfalusi, U., Eggertsen, G. and Alexson, S.E.H.: Clofibrate treatment increases stearoyl-CoA desaturase mRNA level and enzyme activity in mouse liver. *Biochim. Biophys. Acta*, 1259 (1995) 313-316.
- 1343 Dupressoir, A., Puech, A. and Heidmann, T.: IAP retrotransposons in the mouse liver as reporters of ageing. *Biochim. Biophys. Acta*, 1264 (1995) 397-402.
- 1344 Feng, Q., Han, W., Chen, W., Feng, S., Zeng, G., Hou, Z. and Zi, D.: High-pressure liquid chromatography and agarose gel electrophoresis analysis of genome RNA of tick-borne encephalitis virus. In: *Int. Symp. Bioanal. Chem., Proc., 1st 1995*, Chinese Chemical Society, Beijing, 1995, pp. 99-101; C.A., 124 (1996) 4410k.
- 1345 Galvan, B., Christopoulos, T.K. and Diamandis, E.P.: Detection of prostate-specific antigen mRNA by reverse transcription polymerase chain reaction and time-resolved fluorometry. *Clin. Chem. (Washington)*, 41 (1995) 1705-1709.
- 1346 Ganeshan, K., Tadey, T., Nam, K., Braich, R., Purdy, W.C., Boeke, J.D. and Damha, M.J.: Novel approaches to the synthesis and analysis of branched RNA. *Nucleosides Nucleotides*, 14 (1995) 1009-1013; C.A., 123 (1995) 314351r.
- 1347 Ghosh, S., Mallonee, D.H., Hylemon, P.B. and McLean Grogan, W.: Molecular cloning and expression of rat hepatic neutral cholesteryl ester hydrolase. *Biochim. Biophys. Acta*, 1259 (1995) 305-312.

- 1348 Giaccone, G., van Ark-Otte, J., Scagliotti, G., Capranico, G., van der Valk, P., Rubio, G., Dalesio, O., Lopez, R., Zunino, F., Walboomers, J. and Pinedo, H.M.: Differential expression of DNA topoisomerases in non-small cell lung cancer and normal lung. *Biochim. Biophys. Acta*, 1264 (1995) 337-346.
- 1349 Goda, S.K. and Minton, N.P.: A simple procedure for gel electrophoresis and Northern blotting of RNA. *Nucleic Acids Res.*, 23 (1995) 3357-3358; C.A., 123 (1995) 219526t.
- 1350 Hatayama, T. and Masaoka, T.: Inhibition mechanism of HSP70 induction in murine FM3A cells maintained at low culture temperature. *Biochim. Biophys. Acta*, 1269 (1995) 243-252.
- 1351 Hawcroft, D.M. and Geary, C.: The use of a nonradioactively labelled probe system in an electrophoretic ribotyping method for the differentiation of strains of coagulase-negative *Staphylococci*. *Electrophoresis (Weinheim)*, 17 (1996) 55-57.
- 1352 Hill, O., Cetin, Y., Cieslak, A., Mägert, H.-J. and Forssmann, W.-G.: A new human guanylate cyclase-activating peptide (GCAP-II, uroguanylin): precursor cDNA and colonic expression. *Biochim. Biophys. Acta*, 1253 (1995) 146-149.
- 1353 Hing, P.A., Hoff, L.B., Lachenmeier, E.W., Mead, D.E., Simkins, B.A. and Elcavitch, J.W.: Fluorescence-based electrophoresis system for polynucleotide analysis. *PCT Int. Appl. WO 95 21,378* (Cl. GO1N27/447), 10 Aug. 1995, US Appl. 193,629, 07 Feb. 1994; 25 pp.; C.A., 123 (1995) 250640z.
- 1354 Hoang, V. and Hofemeister, J.: *Bacillus amyloliquefaciens* possesses a second type I signal peptidase with extensive sequence similarity to other *Bacillus* SPases. *Biochim. Biophys. Acta*, 1269 (1995) 64-68.
- 1355 Itoh, S., Iemura, O., Yamada, E., Yoshimura, T., Tsujikawa, K., Kohama, Y. and Mimura, T.: cDNA cloning of mouse ferredoxin reductase from kidney. *Biochim. Biophys. Acta*, 1264 (1995) 159-162.
- 1356 Kang, R., Yamada, K., Tanaka, T., Lu, T. and Noguchi, T.: Relationship between the concentrations of glycolytic intermediates and expression of the L-type pyruvate kinase gene in cultured hepatocytes. *J. Biochem. (Tokyo)*, 119 (1996) 162-166.
- 1357 Kim, A., Roffler-Tarlov, S. and Lin, C.S.: New technique for precise alignment of an RNA differential display gel with its film image. *BioTechniques*, 19 (1995) 346; C.A., 123 (1995) 192819b.
- 1358 Klein, R.L., Mascie, M.P., Harkness, P.C., Hadingham, K.L., Whiting, P.J. and Harris, R.A.: Regulation of allosteric coupling and function of stably expressed  $\gamma$ -aminobutyric acid (GABA) $A$  receptors by chronic treatment with GABA $A$  and benzodiazepine agonists. *J. Pharmacol. Exp. Ther.*, 274 (1995) 1484-1492.
- 1359 Kodama, T., Mizobuchi, M., Takeda, R., Torikai, H., Shinomiya, H. and Ohashi, Y.: Hampered expression of isoaspartyl protein carboxyl methyltransferase gene in the human cataractous lens. *Biochim. Biophys. Acta*, 1245 (1995) 269-272.
- 1360 Lachuer, J., Legras, C., Ronfort, C., Barges, S., Cohen-Adad, F., Quivet, L., Duchamp, C., Verdier, G. and Barré, H.: Molecular cloning and sequencing of a cDNA encoding a  $\beta$ -thyroid hormone receptor in muscovy duckling. *Biochim. Biophys. Acta*, 1310 (1996) 127-130.
- 1361 Lan, P.P., Cahnil, D.J., Zhu, H.J. and Chan, L.: Ethanol modulates apolipoprotein B mRNA editing in the rat. *J. Lipid Res.*, 36 (1995) 2069-2078.
- 1362 Lefkovits, I., Frey, J.R. and Coleclough, C.: Human lymphocyte cDNA ordered library analyzed by 2D gel electrophoresis 2. Frequency distribution of mRNA populations. *Appl. Theor. Electrophor.*, 5 (1995) 43-47; C.A., 123 (1995) 222138y.
- 1363 Li, K. and Williams, R.S.: Cloning and characterization of three new murine genes encoding short homologues of RNase P RNA. *J. Biol. Chem.*, 270 (1995) 25281-25285.
- 1364 Linge, C., Gewert, D., Ellis, J., Tucker, D., Allen, G. and Crowe, J.S.: Transcription of interferon- $\alpha$ 2 alleles from virus-induced human leucocytes and lymphoblastoid cells of African origin. *Biochim. Biophys. Acta*, 1264 (1995) 363-368.
- 1365 Macario, A.J.L., Simon, V.H., Conway de Macario, E.: An archaeal gene upstream of grpE different from eubacterial counterparts. *Biochim. Biophys. Acta*, 1264 (1995) 173-177.
- 1366 Matijevic-Aleksic, N., Sanduja, S.K., Wang, L.-H. and Wu, K.K.: Differential expression of thromboxane A synthase and prostaglandin H synthase in megakaryocytic cell line. *Biochim. Biophys. Acta*, 1269 (1995) 167-175.
- 1367 Miyamoto, Y., Shinki, T., Ohyama, Y., Kasama, T., Iwasaki, H., Hosotani, R., Sato, T. and Suda, T.: Regulation of vitamin D-responsive gene expression by fluorinated analogs of calcitriol in rat osteoblastic ROB-C26 cells. *J. Biochem. (Tokyo)*, 118 (1995) 1068-1076.
- 1368 Murata, S., Matsumura, Y., Takada, K., Asai, Y., Takaoka, M. and Morimoto, S.: Role of transforming growth factor- $\beta$ 1 on platelet-induced enhancement of endothelin-1 production in cultured vascular endothelial cells. *J. Pharmacol. Exp. Ther.*, 274 (1995) 1524-1530.
- 1369 Nakagawa, H., Matsubara, S., Kuriyama, M., Yoshidome, H., Fujiyama, J., Yoshida, H. and Osame, M.: Cloning of rat lysosomal acid lipase cDNA and identification of the mutation in the rat model of Wolman's disease. *J. Lipid Res.*, 36 (1995) 2212-2218.
- 1370 Nikami, H., Shimizu, Y., Sumida, M., Minokoshi, Y., Yoshida, T., Saito, M. and Shimazu, T.: Expression of  $\beta$ 3-adrenoceptor and stimulation of glucose transport by  $\beta$ 3-agonists in brown adipocyte primary culture. *J. Biochem. (Tokyo)*, 119 (1996) 120-125.
- 1371 Seki, M. and Honda, Y.: Phosphorothioate antisense oligodeoxyribonucleotides capable of inhibiting hepatitis C virus gene expression: *in vitro* translation assay. *J. Biochem. (Tokyo)*, 118 (1995) 1199-1204.
- 1372 Shimizu, N., Kawase, C., Nakazono, H., Hemmi, H., Shimatake, H. and Aoki, T.: A novel RNA splicing mutation in Japanese patients with Wilson disease. *Biochem. Biophys. Res. Commun.*, 217 (1995) 16-20.
- 1373 Sölich, J.-P. and Arnold, G.J.: Multiplex reverse transcription polymerase chain reaction combined with temperature gradient gel electrophoresis as a tool for the normalized quantitation of intrinsic factor mRNA. *Electrophoresis (Weinheim)*, 17 (1996) 30-39.
- 1374 Takai, R., Tanaka, E., Miyazaki, T., Suda, M. and Tashiro, F.: Function of RNH-1/14-3-3 $\beta$  gene in cellular differentiation and proliferation. *J. Biochem. (Tokyo)*, 118 (1995) 1045-1053.
- 1375 Talavera, F., Chen, Z. and Menon, K.M.J.: IRS-1 Expression on the luteinized rat ovary: IGF-I and cyclic AMP effects on IRS-1 tyrosine phosphorylation. *Biochim. Biophys. Acta*, 1310 (1996) 10-18.
- 1376 Tanaka, S., Yamashita, S. and Hosaka, K.: Cloning and expression of human cDNA encoding phosphatidylinositol transfer protein  $\beta$ . *Biochim. Biophys. Acta*, 1259 (1995) 199-202.

- 1377 Van Dijk, K.W., Steketee, K., Havekes, L., Frants, R. and Hofker, M.: Genomic and cDNA cloning of a novel mouse lipoxygenase gene. *Biochim. Biophys. Acta*, 1259 (1995) 4-8.
- 1378 Vari, F. and Bell, K.: A simplified silver diammine method for the staining of nucleic acids in polyacrylamide gels. *Electrophoresis (Weinheim)*, 17 (1996) 20-25.
- 1379 Vitelli, R., Chiariello, M., Bruni, C.B. and Bucci, C.: Cloning and expression analysis of the murine Rab7 cDNA. *Biochim. Biophys. Acta*, 1264 (1995) 268-270.
- 1380 Vogel, L.B., Arthur, R. and Fujita, D.J.: An aberrant lck mRNA in two human T-cell lines. *Biochim. Biophys. Acta*, 1264 (1995) 168-172.
- 1381 Widlak, W., Markkula, M., Krawczyk, Z., Kananen, K. and Huhtaniemi, I.: A 252 bp upstream region of the rat spermatocyte-specific hst70 gene is sufficient to promote expression of the hst70-CAT hybrid gene in testis and brain of transgenic mice. *Biochim. Biophys. Acta*, 1264 (1995) 191-200.
- 1382 Yarden, A., Salomon, D. and Geiger, B.: Zebrafish cyclin D1 is differentially expressed during early embryogenesis. *Biochim. Biophys. Acta*, 1264 (1995) 257-260.
- 1383 Zhang, F., Riley, J. and Gant, T.W.: Use of internally controlled reverse transcriptase-polymerase chain reaction for absolute quantitation of individual multidrug resistant gene transcripts in tissue samples. *Electrophoresis (Weinheim)*, 17 (1996) 255-260.
- See also 760, 789, 1105, 1116, 1133, 1166, 1248, 1308, 1402, 1404, 1443, 1462.
- 21c. Nucleic acids, DNA
- 1384 Arakawa, H., Maeda, M. and Tsuji, A.: Analysis of single strand conformation polymorphism by capillary electrophoresis. In: Hatano, H. and Hanai, T. (Editors), *Int. Symp. Chromatogr., 35th Anniv. Res. Group Liq. Chromatogr. Jpn.*, World Scientific, Singapore, 1995, pp. 409-418; C.A., 123 (1995) 280140d.
- 1385 Arakawa, H., Nakashiro, S., Maeda, M. and Tsuji, A.: Analysis of single-strand DNA conformation polymorphism by capillary electrophoresis. *J. Chromatogr. A*, 722 (1996) 359-368.
- 1386 Ayoub, M.El-Sayed.: Imaging individual DNA molecules during gel electrophoresis and manipulating magnetic microspheres for biophysical applications. Avail. *Univ. Microfilms Int.*, Order No. DA9519859, 1994, 203 pp.; C.A., 123 (1995) 222126t.
- 1387 Baba, Y. and Tsuhako, M.: (Analysis of DNA by capillary electrophoresis using rare earth complexes as new types of fluorescent dyes). *Kidorui*, 26 (1995) 344-345; C.A., 123 (1995) 219482a.
- 1388 Baida, G.E. and Kuzmin, N.P.: Cloning and primary structure of a new hemolysin gene from *Bacillus cereus*. *Biochim. Biophys. Acta*, 1264 (1995) 151-154.
- 1389 Barron, A.E. and Blanch, H.W.: DNA separations by slab gel and capillary electrophoresis: theory and practice. *Sep. Purif. Methods*, 24 (1995) 1-118; C.A., 123 (1995) 192584w - a review with 424 refs.
- 1390 Bir, N., Paliwal, A., Muralidhar, K., Reddy, P. and Sarma, P.U.: A rapid method for the isolation of genomic DNA from *Aspergillus fumigatus*. *Prepar. Biochem.*, 25 (1995) 171-181.
- 1391 Boutrou, R., Thuault, D. and Bourgeois, C.M.: Identification and characterization of *Streptococcus thermophilus* strains by pulsed-field gel electrophoresis. *J. Appl. Bacteriol.*, 79 (1995) 454-458; C.A., 124 (1996) 4306f.
- 1392 Buitkamp, J. and Epplen, J.T.: Modern genome research and DNA diagnostics in domestic animals in the light of classical breeding techniques. *Electrophoresis (Weinheim)*, 17 (1996) 1-11 - a review with 111 refs.
- 1393 Cchianale, J., Vollrath, V., Wielandt, A.M., Miranda, S., Gonzalez, R., Fresno, A.M., Quintana, C., Gonzalez, S., Andrade, L. and Guzman, S.: Differences between nuclear run-off and mRNA levels for multidrug resistance gene expression in the cephalocaudal axis of the mouse intestine. *Biochim. Biophys. Acta*, 1264 (1995) 369-376.
- 1394 Coombs, R.O. and Cann, J.R.: Extended theory of the electrophoretic mobility-shift analysis of nonspecific protein-DNA complexes, featuring cooperativity. *Electrophoresis (Weinheim)*, 17 (1996) 12-19 - a review with 28 refs.
- 1395 Dereuddre, S., Frey, S., Delaporte, C. and Jacquemin-Sablon, A.: Cloning and characterization of full-length cDNAs coding for the DNA topoisomerase II  $\beta$  from Chinese hamster lung cells sensitive and resistant to 9-OH-ellipticine. *Biochim. Biophys. Acta*, 1264 (1995) 178-182.
- 1396 Eremeeva, M., Balayeva, N., Ignatovich, V. and Raoult, D.: Genomic study of *Rickettsia akari* by pulsed-field gel electrophoresis. *J. Clin. Microbiol.*, 33 (1995) 3022-3024; C.A., 124 (1996) 2251k.
- 1397 Escribano, J., Ortego, J. and Coca-Prados, M.: Isolation and characterization of cell-specific cDNA clones from a subtractive library of the ocular ciliary body of a single normal human donor: transcription and synthesis of plasma proteins. *J. Biochem. (Tokyo)*, 118 (1995) 921-931.
- 1398 Evans, M.D., Podmore, I.D., Daly, G.J., Perrett, D., Luncet, J. and Herbert, K.E.: Detection of purine lesions in cellular DNA using single cell gel electrophoresis with fpg protein. *Biochem. Soc. Trans.*, 23 (1995) 434S; C.A., 123 (1995) 222135v.
- 1399 Felmlee, T.A., Mitchell, P.S., Ulfelder, K.J., Persing, D.H. and Landers, J.P.: (Capillary electrophoresis for the post-amplification detection of a hepatitis C virus-specific DNA product in human serum). *J. Capillary Electrophor.*, 2 (1995) 125-130; C.A., 123 (1995) 192778n.
- 1400 Felmlee, T.A., Oda, R.P., Persing, D.A. and Landers, J.P.: Capillary electrophoresis of DNA. Potential utility for clinical diagnoses. *J. Chromatogr. A*, 717 (1995) 127-137.
- 1401 Fischer, R.M., Mailly, F., Peacock, R.E., Hamsten, A., Seed, M., Yudkin, J.S., Beisiegel, U., Feussner, G., Miller, G., Humphries, S.E. and Talmud, P.J.: Interaction of the lipoprotein lipase asparagine 191 $\rightarrow$ serine mutation with body mass index determines elevated plasma triacylglycerol concentrations: a study in hyperlipidemic subjects myocardial infarction survivors, and healthy adults. *J. Lipid Res.*, 36 (1995) 2104-2112.
- 1402 Fluit, A.C. and Widjojoatmodjo, M.N.: A method for identifying microorganisms based on nucleic acid amplification and gel electrophoresis. *PCT Int. Appl. WO 95 13,396 (Cl. C12Q1/68)*, 18 May 1995, NL Appl. 93/1,957, 11 Nov. 1993; 34 pp.; C.A., 123 (1995) 220262k.
- 1403 Gelfi, C., Cossu, G., Carta, P., Serra, M. and Righetti, P.G.: Gene dosage in capillary electrophoresis: pre-natal diagnosis of Down's syndrome. *J. Chromatogr. A*, 718 (1995) 405-412.

- 1404 Hardy, E., Sosa, A.E., Pupo, E., Casalvilla, R. and Fernandez-Patron, C.: Zinc-imidazole positive: a new method for DNA detection after electrophoresis on agarose gels not interfering with DNA biological integrity. *Electrophoresis (Weinheim)*, 17 (1996) 26-29.
- 1405 Hubert, S.J. and Slater, G.W.: Theory of capillary electrophoretic separations of DNA-polymer complexes. *Electrophoresis (Weinheim)*, 16 (1995) 2137-2142.
- 1406 Imai, H., Sumi, D., Hanamoto, A., Arai, M., Sugiyama, A., Chiba, N., Kuchino, Y. and Nakagawa, Y.: Molecular cloning and functional expression of a cDNA for rat phospholipid hydroperoxide glutathione peroxidase: 3'-untranslated region of the gene is necessary for functional expression. *J. Biochem. (Tokyo)*, 118 (1995) 1061-1067.
- 1407 Kath, T. and Schäfer, G.: A secY homologous gene in the crenarchaeon *Sulfolobus acidocaldarius*. *Biochim. Biophys. Acta*, 1264 (1995) 155-158.
- 1408 Khan, M.A., Latif, N., Petrobelli, P., Yacoub, M.H. and Dunn, M.J.: Construction of an internal standard for semi-quantitative polymerase chain reaction analysis of heat shock proteins. *Electrophoresis (Weinheim)*, 17 (1996) 40-43.
- 1409 Kuypers, A.W.H.M., Linssen, P.C.M., Willems, P.M.W. and Mensink, E.J.B.M.: On-line melting of double-stranded DNA for analysis of single-stranded DNA using capillary electrophoresis. *J. Chromatogr. B*, 675 (1996) 205-211.
- 1410 Lee, D., Reeves, J.C. and Cooke, R.J.: DNA profiling and plant variety registration: 1. The use of random amplified DNA polymorphisms to discriminate between varieties of oilseed rape. *Electrophoresis (Weinheim)*, 17 (1996) 261-265.
- 1411 Lépine, G., Laroche, A., Lemieux, G. and Pallotta, D.: The two alleles of the hapP gene in *Physarum polycephalum* code for different proteins. *Biochim. Biophys. Acta*, 1264 (1995) 271-274.
- 1412 Luro, F. and Laigret, F.: Preparation of high molecular weight genomic DNA from nuclei of woody plants. *BioTechniques*, 19 (1995) 380-392; C.A., 123 (1995) 219504j.
- 1413 MacNeil, T., Bierilo, K.K., Menke, J.G. and Hess, J.F.: Cloning and pharmacological characterization of a rabbit bradykinin B<sub>1</sub> receptor. *Biochim. Biophys. Acta*, 1264 (1995) 223-228.
- 1414 Matsunaga, S., Matsugo, S. and Tsuruhara, T.: (Analysis of chromosomal DNA of *Acanthamoeba* species by pulsed-field electrophoresis). *Tokyo Gakugei Daigaku Kiyo, Dai-4-bunron*, 47 (1995) 141-154; C.A., 124 (1996) 1841r.
- 1415 Merkens, L.S., Bryan, S.K. and Moses, R.E.: Inactivation of the 5'-3' exonuclease of *Thermus aquaticus* DNA polymerase. *Biochim. Biophys. Acta*, 1264 (1995) 243-248.
- 1416 Mita, K., Ariyoshi, N., Abé, S.-I., Takamine, K. and Katagiri, C.: Structure of genes for sperm-specific nuclear basic protein (SP4) in *Xenopus laevis*. *Biochim. Biophys. Acta*, 1245 (1995) 430-438.
- 1417 Mitchelson, K.R. and Cheng, J.: Point mutation screening by high-performance capillary electrophoresis. *J. Capillary Electrophor.*, 2 (1995) 137-143; C.A., 123 (1995) 189371u.
- 1418 Molla, A., Touard-Talbot, L. and Block, M.R.: Cotranscription of two RNA coding for the cell adhesion regulator and its variant in Reh leukemia cells. *Biochim. Biophys. Acta*, 1315 (1996) 6-8.
- 1419 Nagai, H., Tsumura, H., Ponglikitmongkol, M., Kim, Y. and Matsubara, K.: Genomic aberrations in human hepatoblastomas detected by 2-dimensional gel analysis. *Cancer Res.*, 55 (1995) 4549-4551.
- 1420 Nittoh, T., Watanabe, M., Okayama, H., Misawa, S., Isobe, Y., Hayashi, H., Mue, S. and Ohuchi, K.: Cloning of cDNA for rat eosinophil major basic protein. *Biochim. Biophys. Acta*, 1264 (1995) 261-264.
- 1421 Noolandi, J. and Turmel, C.: Preparation, manipulation, and pulse strategy for one-dimensional pulsed-field gel electrophoresis (ODPFGE). *Mol. Biotechnol.*, 4 (1995) 25-43; C.A., 123 (1995) 221962a - a review with 15 refs.
- 1422 Pfordt, M.: (A new standard for detection of genetic mutations). *LaborPraxis*, 19 (1995) 18-23; C.A., 123 (1995) 331065t.
- 1423 Ren, J., Deng, X., Cao, Y. and Yao, K.: Analysis of DNA fragments and polymerase chain reaction products from Tx gene by capillary electrophoresis with a laser-induced fluorescence detection using no-gel sieving media. *Anal. Biochem.*, 233 (1996) 246-249.
- 1424 Saito-Ito, A., He, S., Kimura, M., Matsumura, T. and Tanabe, K.: Cloning and structural analysis of the gene for cAMP-dependent protein kinase catalytic subunit from *Plasmodium yoelii*. *Biochim. Biophys. Acta*, 1269 (1995) 1-5.
- 1425 Sakashita, H., Sakuma, T., Akitomo, Y., Ohkubo, T., Kainosho, M., Sekiguchi, M. and Morikawa, K.: Sequence-specific DNA recognition of the *Escherichia coli* Ada protein associated with the methylation-dependent functional switch for transcriptional regulation. *J. Biochem. (Tokyo)*, 118 (1995) 1184-1191.
- 1426 Scotet, E. and Houssaint, E.: The choice between alternative IIIb and IIIc exons of the FGFR-3 gene is not strictly tissue-specific. *Biochim. Biophys. Acta*, 1264 (1995) 238-242.
- 1427 Skeidsvoll, J. and Ueland, P.M.: Double-stranded DNA by capillary electrophoresis with laser-induced fluorescence detection using the monomeric dye SYBR Green I. *Anal. Biochem.*, 231 (1995) 359-365.
- 1428 Sundfors, C. and Collan, Y.: Basics of quantitative polymerase chain reaction: 2. Electrophoresis and quantitation of polymerase chain reaction products. *Electrophoresis (Weinheim)*, 17 (1996) 44-48.
- 1429 Tang, M. and Ravi Subbiah, M.T.: Estrogens protect against hydrogen peroxide and arachidonic acid induced DNA damage. *Biochim. Biophys. Acta*, 1299 (1996) 155-159.
- 1430 To-Anum, C., Nelson, H. and Ouchi, S.: Electrophoretic karyotyping of *Fusarium oxysporum*. *Hippon Shokubutsu Byori Gakkaiho*, 61 (1995) 350-356; C.A., 123 (1995) 334208c.
- 1431 Tomayko, J.F. and Murray, B.E.: Analysis of *Enterococcus faecalis* isolates from intercontinental sources by multilocus enzyme electrophoresis and pulsed-field gel electrophoresis. *J. Clin. Microbiol.*, 33 (1995) 2903-2907; C.A., 123 (1995) 334198z.
- 1432 Topcu, Z. and Castora, F.J.: Mammalian mitochondrial DNA topoisomerase I preferentially relaxes supercoils in plasmids containing specific mitochondrial DNA sequences. *Biochim. Biophys. Acta*, 1264 (1995) 377-387.

- 1433 Versavaud, A. and Hallet, J.-N.: Pulsed-field gel electrophoresis combined with rare-cutting endonucleases for strain differentiation of *Candida famata*, *Kloeckera apiculata* and *Schizosaccharomyces pombe* with chromosome number and size estimation of the two former. *Syst. Appl. Microbiol.*, 18 (1995) 303-309; C.A., 124 (1996) 4304d.
- 1434 Versavaud, A., Pouillard, A., Roulland, C., Lurton, L., Lecocq, M. and Hallet, J.N.: (Fermentation microflora for distillation wines from the Cognac region). In: Cantagrel, R. (Editor), *Symp. Sci. Int. Cognac, 1st 1992*, Tec & Doc-Lavoisier, Paris, 1993, pp. 208-212; C.A., 123 (1995) 197106b.
- 1435 Voelkel, A.R. and Noolandi, J.: Mobilities of labeled and unlabeled single-stranded DNA in free solution electrophoresis. *Macromolecules*, 28 (1995) 8182-8189; C.A., 123 (1995) 309752t.
- 1436 Wawer, C. and Muyzer, G.: Genetic diversity of *Desulfovibrio* spp. in environmental samples analyzed by denaturing gradient gel electrophoresis of [NiFe] hydrogenase gene fragments. *Appl. Environ. Microbiol.*, 61 (1995) 2203-2210; C.A., 123 (1995) 189565k.
- 1437 Wong, R.S.L., Dynlacht, J.R., Cedervall, B. and Dewey, W.C.: Analysis of pulsed-field gel electrophoresis of DNA double-strand breaks induced by heat and/or x-irradiation in bulk and replicating DNA of CHO cells. *Int. J. Radiat. Biol.*, 68 (1995) 141-152; C.A., 123 (1995) 221828m.
- 1438 Wood, N. and Bidwell, J.: Genetic screening and testing by induced heteroduplex formation. *Electrophoresis (Weinheim)*, 17 (1996) 247-254.
- 1439 Wu, J.-R. and Gilbert, D.M.: Rapid DNA preparation for 2D gel analysis of replication intermediates. *Nucleic Acids Res.*, 23 (1995) 3997-3998; C.A., 124 (1996) 1751m.
- 1440 Yamashita, K., Wada, C., Shinoda, H., Kuwano, S., Atari, E. and Okayasu, I.: (Establishment of newly developed method of non-RI PCR-SSCP useful for every vertical electrophoresis). *Igaku Kensa*, 44 (1995) 1244-1249; C.A., 123 (1995) 219419k.
- 1441 You, C.-T. and Sun, Y.H.: Tilted agarose gel electrophoresis improves resolution. *BioTechniques*, 19 (1995) 574-575; C.A., 123 (1995) 250486d.
- 1442 Zakharov, S.F., Garner, M.M. and Chrambach, A.: Recovery of SDS-protein and DNA using commercial automated gel electrophoresis apparatus. *Appl. Theor. Electrophor.*, 5 (1995) 25-29; C.A., 123 (1995) 222136w.
- See also 760, 789, 1132, 1147, 1275, 1362, 1369, 1373, 1378, 1380, 1382, 1448, 1467, 1492.
- 21d. Structural studies on RNA and RNA mapping**
- 1443 Burk, S.E., Menon, A.G. and Shull, G.E.: Analysis of the 5' end of the rat plasma membrane Ca<sup>2+</sup>-ATPase isoform 3 gene and identification of extensive trinucleotide repeat sequences in the 5' untranslated region. *Biochim. Biophys. Acta*, 1240 (1995) 119-124.
- 1444 Choi, S.J., Oh, D.H., Song, C.S., Roy, A.K. and Chatterjee, B.: Molecular cloning and sequence analysis of the rat liver carnitine octanoyltransferase cDNA, its natural gene and the gene promoter. *Biochim. Biophys. Acta*, 1264 (1995) 215-222.
- 1445 Katsivela, E. and Höfle, M.G.: Low-molecular-mass RNA finger-printing of bacteria by capillary electrophoresis using entangled polymer solutions. *J. Chromatogr. A*, 717 (1995) 91-103.
- 1446 Li, H. and Dillon, J.-A. R.: Utility of ribotyping, restriction endonuclease analysis and pulsed-field gel electrophoresis to discriminate between isolates of *Neisseria gonorrhoeae* of serovar IA-2 which require arginine, hypoxanthine or uracil for growth. *J. Med. Microbiol.*, 43 (1995) 208-215; C.A., 124 (1996) 4436y.
- 1447 Nacken, W., Manitz, M.P. and Sorg, C.: Molecular characterisation of the genomic locus of the mouse MRP8 gene. *Biochim. Biophys. Acta*, 1315 (1996) 1-5.
- See also 888, 1464.
- 21e. Structural studies on DNA and DNA mapping**
- 1448 Aoki, Y., Suzuki, Y., Sakamoto, O., Li, X., Takahashi, K., Ohtake, A., Sakuta, R., Ohura, T., Miyabayashi, S. and Narisawa, K.: Molecular analysis of holocarboxylase synthetase deficiency: a missense mutation and a single base deletion are predominant in Japanese patients. *Biochim. Biophys. Acta*, 1272 (1995) 168-174.
- 1449 Baba, Y., Tsuhako, M. and Akashi, M.: Capillary affinity gel electrophoretic technologies (CAGT): new tool for highly specific recognition of DNA sequence. In: Hatano, H. and Hanai, T. (Editors), *Int. Symp. Chromatogr., 35th Anniv. Res. Group Liq. Chromatogr. Jpn.*, World Scientific, Singapore, 1995, pp. 313-317; C.A., 123 (1995) 280139k.
- 1450 Bassam, B.J. and Bentley, S.: Electrophoresis of polyester-backed polyacrylamide gels. *BioTechniques*, 19 (1995) 568-573; C.A., 123 (1995) 250485c.
- 1451 Berg, C., Hedrum, A., Holmberg, A., Pontén, F., Uhlén, M. and Lundeberg, J.: Direct solid-phase sequence analysis of the human p53 gene by use of multiplex polymerase chain reaction and α-thiotriphosphate nucleotides. *Clin. Chem. (Washington)*, 41 (1995) 1461-1466.
- 1452 Bobba, A., Giannattasio, S., Pucci, A., Lippolis, R., Camaschella, C. and Marra, E.: Characterization of mitochondrial DNA in primary cardiomyopathies. *Clin. Chim. Acta*, 243 (1995) 181-189.
- 1453 Bolla, M.K., Haddad, L., Humphries, S.E., Winder, A.F. and Day, I.N.M.: High-throughput method for determination of apolipoprotein E genotypes with use of restriction digestion analysis by microplate array diagonal gel electrophoresis. *Clin. Chem. (Washington)*, 41 (1995) 1599-1604.
- 1454 Breimer, L.H., Winder, A.F., Panayiotidis, P., Jay, M., Moore, A. and Jay, B.: A trinucleotide deletion together with a base duplication event at codon 439 in the human tyrosinase gene identifies a mutational hotspot. *Clin. Chim. Acta*, 243 (1995) 35-42.
- 1455 Cuypers, H., Berghöfer, J. and Zumft, W.G.: Multiple nosZ promoters and anaerobic expression of nos genes necessary for *Pseudomonas stutzeri* nitrous oxide reductase and assembly of its copper centers. *Biochim. Biophys. Acta*, 1264 (1995) 183-190.
- 1456 Day, I.N.M., Humphries, S.E., Richards, S., Norton, D. and Reid, M.: High-throughput genotyping using horizontal polyacrylamide gels with wells arranged for microplate array diagonal gel electrophoresis (MADGE). *BioTechniques*, 19 (1995) 830-835; C.A., 124 (1996) 1779b.

- 1457 Delincee, H.: Rapid and simple screening tests to detect the radiation treatment of foods. *Radiat. Phys. Chem.*, 46(Proceedings of the 9th International Meeting on Radiation Processing, 1994, Pt. 1) (1995) 677-680; C.A., 123 (1995) 337720z.
- 1458 Desmarais, E. and Roizes, G.: (DGGE, principles and use. Analysis of the D-loop of mitochondrial DNA). *Colloq.-Inst. Natl. Rech. Agron.*, 72 (1995) 17-20; C.A., 123 (1995) 276981m.
- 1459 Douthart, R.J., Welt, M. and Walling, L.: Ribbon channel plate rotating drum DNA sequencing device. *Electrophoresis (Weinheim)*, 17 (1996) 49-54.
- 1460 Figeys, D. and Dovichi, N.J.: Effect of the age of non-cross-linked polyacrylamide on the separation of DNA sequencing samples. *J. Chromatogr. A*, 717 (1995) 105-111.
- 1461 Figeys, D. and Dovichi, N.J.: Multiple separations of DNA sequencing fragments with a non-cross-linked polyacrylamide-filled capillary: capillary electrophoresis at 300 V/cm. *J. Chromatogr. A*, 717 (1995) 113-116.
- 1462 Flowers, K.M., Mellor, H., Rimball, S.R. and Jefferson, L.S.: Structure and sequence of the gene encoding the  $\alpha$ -subunit of rat translation initiation factor-2B. *Biochim. Biophys. Acta*, 1264 (1995) 163-167.
- 1463 Hill, J.E., Kuzio, J. and Faulkner, P.: Identification and characterization of the v-cath gene of the baculovirus, CfMNPV. *Biochim. Biophys. Acta*, 1264 (1995) 275-278.
- 1464 Hoff, L.B., Lachenmeier, E.W., Raysberg, Y.M. and Nordman, E.S.: Improved real-time scanning fluorescence electrophoresis apparatus for the analysis of polynucleotide fragments. *PCT Int. Appl. WO 95 21,377* [Cl. GO1N27/447], 10 Aug. 1995, US Appl. 192,485, 07 Feb. 1994; 21 pp.; C.A., 123 (1995) 250641a.
- 1465 Karger, A.E.: Separation of DNA sequencing fragments using an automated capillary electrophoresis instrument. *Electrophoresis (Weinheim)*, 17 (1996) 144-151.
- 1466 Kennerson, M.L., Gordon, M.J., Blair, I.P. and Nicholson, G.A.: Single test for two hereditary neuropathies, CMT1A and HNPP. *Clin. Chem. (Washington)*, 41 (1995) 1534-1535.
- 1467 Kim, Y. and Morris, M.D.: Ultrafast high resolution separation of large DNA fragments by pulsed-field capillary electrophoresis. *Electrophoresis (Weinheim)*, 17 (1996) 152-160.
- 1468 Konishi, T., Nomoto, M., Shimizu, K., Abe, T., Itoh, H., Friedrich, H., Günther, E. and Higashi, K.: Dominant role of the second heat shock element in expression of the HSP70-1 gene in rat liver after whole body hyperthermia. *J. Biochem. (Tokyo)*, 118 (1995) 1021-1029.
- 1469 Kuehn, I., Burman, L.G., Haeggman, S., Tullus, K. and Murray, B.E.: Biochemical fingerprinting compared with ribotyping and pulsed-field gel electrophoresis of DNA for epidemiological typing of Enterococci. *J. Clin. Microbiol.*, 33 (1995) 2812-2817; C.A., 123 (1995) 334295d.
- 1470 Kukhanova, M., Liu, S., Mozherin, D., Lin, T., Chu, C.K. and Cheng, Y.: L- and D-enantiomers of 2',3'-dideoxyctidine 5'-triphosphate analogs as substrates for human DNA polymerases. Implications for the mechanism of toxicity. *J. Biol. Chem.*, 270 (1995) 23055-23059.
- 1471 Loric, S., Dumas, F., Eschwege, P., Blanchet, P., Benoit, G., Jardin, A. and Lacour, B.: Enhanced detection of hematogenous circulating prostatic cells in patients with prostate adenocarcinoma by using nested reverse transcription polymerase chain reaction assay based on prostate-specific membrane antigen. *Clin. Chem. (Washington)*, 41 (1995) 1698-1704.
- 1472 Maeda, S., Suzuki, A., Lin, K.-H., Inagaki, H. and Saito, T.: DNA fragmentation induced in high-cell-density culture of primary rat hepatocytes is an active process dependent on energy availability, gene expression, and calmodulin. *J. Biochem. (Tokyo)*, 118 (1995) 1161-1165.
- 1473 Marcias, B. and Roizes, G.: (Genetic imprints in centromeric sequences of satellite DNA revealed by pulsed field electrophoresis). *Colloq.-Inst. Natl. Rech. Agron.*, 72 (1995) 27-34; C.A., 123 (1995) 307329m - a review with 28 refs.
- 1474 Marino, M.A., Turni, L.A., Del Rio, S.A., Williams, P.E. and Creagan, P.B.: The analysis of simple sequence repeat DNA in soybean by capillary gel electrophoresis. *Appl. Theor. Electrophor.*, 5 (1995) 1-5; C.A., 123 (1995) 219534u.
- 1475 Mikheev, A., Cha, R.S. and Zarbl, H.: Detection of point mutations in Ras in tumor cell lines by denaturant gradient gel electrophoresis. *Methods Enzymol.*, 255(Small GTPases and Their Regulators, Part A) (1995) 442-451; C.A., 124 (1996) 22593b - a review with 16 refs.
- 1476 Monteith, D.K. and Vanstone, J.: Comparison of DNA damage from genotoxins using the microgel electrophoresis assay with primary cultures of rat and human hepatocytes. *Mutat. Res.*, 345 (1995) 79-86; C.A., 124 (1996) 23414f.
- 1477 O'Brien, R.M., Printz, R.L., Halimi, N., Tiesinga, J.J. and Granner, D.K.: Structural and functional analysis of the human phosphoenolpyruvate carboxykinase gene promoter. *Biochim. Biophys. Acta*, 1264 (1995) 284-288.
- 1478 Oto, M., Suehiro, T. and Yuasa, Y.: Identification of mutated p53 in cancer by non-gel-sieving capillary electrophoresis SSPC analysis. *Clin. Chem. (Washington)*, 41 (1995) 1787-1788.
- 1479 Ren, J., Deng, X., Cao, Y. and Yao, K.: Analysis of polymerase chain reaction products from Tx gene using capillary electrophoresis with a laser-induced fluorescence detector. In: *Int. Symp. Bioanal. Chem., Proc.*, 1st 1995, Chinese Chemical Society, Beijing, 1995, pp. 44-45; C.A., 124 (1996) 22678h.
- 1480 Simonaro, C.M. and Schuchman, E.H.: N-Acetylgalactosamine-4-sulfatase: identification of four new mutations within the conserved sulfatase region causing mucopolysaccharidosis type VI. *Biochim. Biophys. Acta*, 1272 (1995) 129-132.
- 1481 Spurr, N.K., Gough, A.C., Chinegwundoh, F.I. and Smith, C.A.D.: Polymorphism in drug-metabolizing enzymes as modifiers of cancer risk. *Clin. Chem. (Washington)*, 41 (1995) 1864-1869.
- 1482 Takagi, S.: DNA sequence determination device. *Jpn. Kokai Tokyo Koho JP 07,244,046* [95,244,046] (Cl. GO1N33/50), 19 Sep. 1995, Appl. 94/64,526, 8 Mar. 1994; 4 pp.; C.A., 124 (1996) 2528f.
- 1483 Tenover, F.C., Arbeit, R.D., Goering, R.V., Mickelsen, P.A., Murray, B.E., Persing, D.H. and Swaminathan, B.: Interpreting chromosomal DNA restriction patterns produced by pulsed-field gel electrophoresis: Criteria for bacterial strain typing. *J. Clin. Microbiol.*, 33 (1995) 2233-2239; C.A., 123 (1995) 277086k.
- 1484 Tsai, M.Y., Hanson, N.Q., Schwichtenberg, K. and Garg, U.: Amplification refractory mutation system to identify mutations in cystathionine  $\beta$ -synthase deficiency. *Clin. Chem. (Washington)*, 41 (1995) 1775-1777.
- 1485 Van der Schans, M.J., Beckers, J.L., Molling, M.C. and Everaerts, F.M.: Intrinsic isotachophoretic preconcentration in capillary gel electrophoresis of DNA restriction fragments. *J. Chromatogr. A*, 717 (1995) 139-147.

- 1486 Wölfl, S., Wittig, B. and Rich, A.: Identification of transcriptionally induced Z-DNA segments in the human c-myc gene. *Biochim. Biophys. Acta*, 1264 (1995) 294-302.
- 1487 Zelinskaya, N.V., Matvienko, N.N., Zheleznyaya, L.A. and Matvienko, N.I.: (A novel site-specific endonuclease from *Bacillus* species ST5). *Biokhimiya (Moscow)*, 60 (1995) 1999-2010.
- 1488 Zhang, J.Z., Fang, Y., Hou, J.Y., Ren, H.J., Jiang, R., Roos, P. and Dovichi, N.J.: Use of non-cross-linked polyacrylamide for four colour DNA sequencing by capillary electrophoresis separation of fragments up to 640 bases in length in two hours. *Anal. Chem.*, 67 (1995) 4589-4593.
- 1489 Zhu, W.-H. and Loh, T.-T.: Effects of Na<sup>+</sup>/H<sup>+</sup> antiport and intracellular pH in the regulation of HL-60 cell apoptosis. *Biochim. Biophys. Acta*, 1269 (1995) 122-128.

See also 813, 1102, 1316, 1360, 1365, 1381, 1382, 1410, 1446, 1447, 1547.

#### 21f. Complex mixtures of nucleic acids and their fragments

- 1490 Kerr, L.D.: Electrophoretic mobility shift assay. *Methods Enzymol.*, 254 (1995) 619-632; C.A., 124 (1996) 22577z.
- 1491 Ludwig, L.B., Hughes, B.J. and Schwartz, S.A.: Biotinylated probes in the electrophoretic mobility shift assay to examine specific dsDNA, ssDNA or RNA-protein interactions. *Nucleic Acids Res.*, 23 (1995) 3792-3793; C.A., 123 (1995) 307486k.
- 1492 Schrader, W. and Linscheid, M.: Determination of styrene oxide adducts in DNA and DNA components. *J. Chromatogr. A*, 717 (1995) 117-125.

See also 1196, 1394, 1405.

#### 22. ALKALOIDS

- 1493 Bjørnsdóttir, I. and Hansen, S.H.: Determination of opium alkaloids in crude opium using non-aqueous capillary electrophoresis. *J. Pharm. Biomed. Anal.*, 13 (1995) 1473-1481.
- 1494 Stuppner, H. and Ganzena, M.: Application of β-cyclodextrin for the analysis of the main alkaloids from *Celandonium majus* by capillary electrophoresis. *J. Chromatogr. A*, 717 (1995) 271-277.
- 1495 Taylor, R.B., Low, A.S. and Reid, R.G.: Determination of opiates in urine by capillary electrophoresis. *J. Chromatogr. B*, 675 (1996) 213-223.
- 1496 Trenerry, V.C., Wells, R.J. and Robertson, J.: Determination of morphine and related alkaloids in crude morphine, poppy straw and opium preparations by micellar electrokinetic capillary chromatography. *J. Chromatogr. A*, 718 (1995) 217-225.
- 1497 Zong, Y.-Y. and Che, C.-t.: Determination of strychnine and brucine by capillary zone electrophoresis. *Planta Med.*, 61 (1995) 456-458; C.A., 124 (1996) 2659z.

#### 23. OTHER SUBSTANCES CONTAINING HETERO CYCLIC NITROGEN

##### 23a. Porphyrins and other pyrroles

See 1314.

#### 23c. Indole derivatives and plant hormones (gibberellins)

See 1032, 1568.

#### 23d. Pyridine derivatives

- 1498 Praus, P.: Determination of pyridine in coal carbonization wastewaters by isotachophoresis. *Chem. Listy*, 89 (1995) 724-727; C.A., 124 (1996) 15099s.

See also 1504, 1568.

#### 23e. Other N-heterocyclic compounds

See 768, 1568.

#### 24. ORGANIC SULPHUR COMPOUNDS (INCL. GLUCOSINOLATES)

- 1499 Bjerregaard, C., Michaelsen, S., Møller, P. and Sørensen, H.: Separation of desulphoglucosinolates by micellar electrokinetic capillary chromatography based on a bile salt. *J. Chromatogr. A*, 717 (1995) 325-333.

See also 809, 1035, 1057, 1571.

#### 25. ORGANIC PHOSPHORUS COMPOUNDS (INCL. SUGAR PHOSPHATES)

See 833, 927, 1046, 1047, 1055, 1058, 1059, 1060, 1065.

#### 26. ORGANOMETALLIC AND RELATED COMPOUNDS

##### 26b. Boranes, silanes and related non-metallic compounds

See 1575.

##### 26c. Coordination compounds

- 1500 Baraj, B., Sastre, A., Merkoçi, A. and Martínez, M.: Determination of chloride complex of Au(III) by capillary zone electrophoresis with direct UV detection. *J. Chromatogr. A*, 718 (1995) 227-232.

- 1501 Tewari, B.B.: Ionophoretic technique for the determination of stability constants of metal-nitrilotriacetate-methionine mixed complexes. *J. Chromatogr. A*, 718 (1995) 454-458.

See also 1589.

#### 27. VITAMINS AND VARIOUS ANIMAL GROWTH FACTORS (NON-PEPTIDIC)

- 1502 Marshall, P.A., Trenerry, V.C. and Thompson, C.O.: The determination of total ascorbic acid in beers, wines, and fruit drinks by micellar electrokinetic capillary chromatography. *J. Chromatogr. Sci.*, 33 (1995) 426-432.

- 1503 Schiewe, J., Mrestani, Y. and Neubert, R.: Application and optimization of capillary zone electrophoresis in vitamin analysis. *J. Chromatogr. A*, 717 (1995) 255-259.
- 1504 Tanaka, S., Kodama, K., Kaneta, T. and Nakamura, H.: Migration behavior of niacin derivatives in capillary electrophoresis. *J. Chromatogr. A*, 718 (1995) 233-237.

## 28. ANTIBIOTICS

- 1505 Fang, Y.-Z., Fang, X.-M. and Ye, J.-N.: (Determination of poly-hydroxy antibiotics by capillary electrophoresis with amperometric detection at a copper electrode). *Gaodeng Xuexiao Huaxue Xuebao*, 16 (1995) 1514-1518; C.A., 124 (1996) 15587z.
- 1506 Van Schepdael, A., Kibaya, R., Roets, E. and Hoogmartens, J.: Analysis of doxycycline by capillary electrophoresis. *Chromatographia*, 41 (1995) 376-369.
- 1507 Van Schepdael, A., Saevels, J., Lepoudre, X., Kibaya, R., Gang, N.Z., Roets, E. and Hoogmartens, J.: Separation of tetracycline and its related substances by capillary zone electrophoresis. *J. High Resolut. Chromatogr.*, 18 (1995) 695-698.
- 1508 Wakayama, T., Akashi, T. and Jino, K.: (Comparison study of HPLC and HPCE for the separation of cephalosporin C and the related compounds). *Kuromatogurafu*, 16 (1995) 94-95; C.A., 123 (1995) 323089p.

## 29. INSECTICIDES, PESTICIDES AND OTHER AGROCHEMICALS

### 29a. General techniques

See 893.

### 29d. Carbamates

- 1509 Yonekubo, J. and Sasaki, H.: (Capillary electrophoresis applied for pesticide separation). *Kankyo Kagaku*, 5 (1995) 334-335; C.A., 123 (1995) 332600a.

### 29e. Herbicides

- 1510 Farran, A. and Ruiz, S.: Effect of aliphatic alcohols as mobile phase modifiers on separation of phenylurea and phenoxyalkyl acid herbicides by micellar electrokinetic capillary chromatography. *Anal. Chim. Acta*, 317 (1995) 181-188.
- 1511 Jung, M. and Brumley, C.: Trace analysis of fluorescein-derivatized phenoxy acid herbicides by micellar electrokinetic chromatography with laser-induced fluorescence detection. *J. Chromatogr. A*, 717 (1995) 299-308.

## 30. SYNTHETIC AND NATURAL DYES

### 30a. Synthetic dyes

- 1512 Blatny, P., Fischer, C.-H., Rizzi, A. and Kenndler, E.: Linear polymers applied as pseudo-phases in capillary zone electrophoresis of azo compounds used as textile dyes. *J. Chromatogr. A*, 717 (1995) 157-166.
- 1513 Liu, H., Zhu, T., Zhang, Y., Qi, S., Huang, A. and Sun, Y.: Determination of synthetic colourant food additives by capillary zone electrophoresis. *J. Chromatogr. A*, 718 (1995) 448-453.
- 1514 Oxpring, D.A., O'Kane, E., Marchant, R. and Smyth, W.F.: The separation and determination of reactive textile dyes by capillary electrophoresis and high performance liquid chromatography. *Anal. Methods Instrum.* 1993, 1 (1994) 196-202; C.A., 123 (1995) 316857j.
- 1515 Sirén, H. and Sulikava, R.: Determination of black dyes from cotton and wool fibres by capillary zone electrophoresis with UV detection: application of marker technique. *J. Chromatogr. A*, 717 (1995) 149-155.

## 31. PLASTICS AND THEIR INTERMEDIATES

- 1516 McNair, H.M. and Sun, X.: Capillary zone electrophoresis for polyimides and polyamides composition analysis. In: Hatano, H. and Hanai, T. (Editors), *Int. Symp. Chromatogr., 35th Anniv. Res. Group Liq. Chromatogr. Jpn.*, World Scientific, Singapore, 1995, pp. 17-25; C.A., 124 (1996) 10019f.

## 32. DRUG ANALYSIS

### 32a. Drug analysis, general techniques

- 1517 Adlard, M., Okofo, G., Meenan, E. and Camilleri, P.: Rapid estimation of octanol-water partition coefficients using deoxycholate micelles in capillary electrophoresis. *J. Chem. Soc., Chem. Commun.*, (1995) 2241-2243; C.A., 123 (1995) 306007t.
- 1518 Aumatell, A. and Guttman, A.: Ultra-fast chiral separation of basic drugs by capillary electrophoresis. *J. Chromatogr. A*, 717 (1995) 229-234.
- 1519 Hill, C.M., Herbert, K.E., Evans, M.D. and Lunec, J.: Application of capillary electrophoresis to the *in vitro* assessment of drug metabolism. *Biochem. Soc. Trans.*, 23 (1995) 432s; C.A., 123 (1995) 245936w.
- 1520 Hudson, J.C., Golin, M. and Malcolm, M.: Capillary zone electrophoresis in a comprehensive screen for basic drugs in whole blood. *J. Can. Soc. Forensic Sci.*, 28 (1995) 137-152; C.A., 123 (1995) 190633n.
- 1521 Koppenhoefer, B., Epperlein, U., Christian, B., Yibing, J., Yuying, C. and Bingcheng, L.: Separation of enantiomers of drugs by capillary electrophoresis. I.  $\gamma$ -Cyclodextrin as chiral solvating agent. *J. Chromatogr. A*, 717 (1995) 181-190.
- 1522 Nishi, H.: (Method development in enantiomeric separation of drugs by capillary electrophoresis). *Kuromatogurafu*, 16 (1995) 84-87; C.A., 123 (1995) 237944 - a review with 6 refs.

- 1523 Riekkola, M.-L. and Jumppanen, J.H.: Development of capillary electrophoretic techniques for pharmaceutical applications. In: Hatano, H. and Hanai, T. (Editors), *Int. Symp. Chromatogr., 35th Anniv. Res. Group Liq. Chromatogr. Jpn.*, World Scientific, Singapore, 1995, pp. 401-407; C.A., 123 (1995) 266247n - a review with 4 refs.
- 1524 Weseloh, G., Bartsch, H. and Koenig, W.A.: Separation of basic drugs by capillary electrophoresis using selectively modified cyclodextrins as chiral selectors. *J. Microcolumn. Sep.*, 7 (1995) 355-363; C.A., 124 (1996) 15628p.

See also 776, 841, 854, 873, 926, 932.

### 32b. Antirheumatics and antiinflammatory drugs

- 1525 Weinz, C. and Blaschke, G.: Investigation of the *in vitro* biotransformation and simultaneous enantioselective separation of thalidomide and its neutral metabolites by capillary electrophoresis. *J. Chromatogr. B*, 674 (1995) 287-292.

See also 1544.

### 32c. Autonomic and cardiovascular drugs

- 1526 Buzinkaiova, T., Skacani, I. and Netriova, J.: Quantitative assay of verapamil in drugs and serum by capillary isotachophoresis. *Pharmazie*, 50 (1995) 799-800.
- 1527 Chevolleau, S. and Tulliez, J.: Optimization of the separation of  $\beta$ -agonists by capillary electrophoresis on untreated and C<sub>18</sub> bonded silica capillaries. *J. Chromatogr. A*, 715 (1995) 345-354.
- 1528 Coors, C., Schulz, H.-G. and Stache, F.: Development and validation of a bioanalytical method for the quantification of diltiazem and desacyldiltiazem in plasma by capillary zone electrophoresis. *J. Chromatogr. A*, 717 (1995) 235-243.
- 1529 Fillet, M., Bechet, I., Chiap, P., Hubert, P. and Crommen, J.: Enantiomeric purity determination of propranolol by cyclodextrin-modified capillary electrophoresis. *J. Chromatogr. A*, 717 (1995) 203-209.
- 1530 Jacometti, N.A., Feltrin, L.C. and Nasi, J.C.: (Electrophoresis of antihypertensive agents). *Rev. Bras. Farm.* 1995, 76 (1995) 17-18; C.A., 124 (1996) 15597c.
- 1531 Li, F., Cooper, S.F. and Mikkelsen, S.R.: Enantioselective determination of oxprenolol and its metabolites in human urine by cyclodextrin-modified capillary zone electrophoresis. *J. Chromatogr. B*, 674 (1995) 277-285.
- 1532 Lukkari, P. and Sirén, H.: Ion-pair chromatography and micellar electrokinetic capillary chromatography in analyzing beta-adrenergic blocking agents from human biological fluids. *J. Chromatogr. A*, 717 (1995) 211-217.
- 1533 Nishi, H. and Terabe, S.: Enantiomeric separation of diltiazem, clentiazem, and its related compounds by capillary electrophoresis using polysaccharides. *J. Chromatogr. Sci.*, 33 (1995) 698-703.
- 1534 Nishi, H., Ishibuchi, K., Nakamura, K., Nakai, H. and Sato, T.: Enantiomeric separation of denopamine by capillary electrophoresis and high-performance liquid chromatography using cyclodextrins. *J. Pharm. Biomed. Anal.*, 13 (1995) 1483-1492.

- 1535 Nishi, H., Nakamura, K., Nakai, H., Sato, T. and Terabe, S.: Enantiomeric separation of trimetoquinol, denopamine and timepidine by capillary electrophoresis and HPLC and the application of capillary electrophoresis to the optical purity testing of the drugs. *Chromatographia*, 40 (1995) 638-644.
- 1536 Sverlova, J. and Bezakova, Z.: Isotachophoretic analysis of stobadine and acyl derivatives of stobadine. *Pharmazie*, 50 (1995) 827-828.

See also 768.

### 32d. Central nervous system drugs

- 1537 Chankvetadze, B., Endresz, G., Bergenthal, D. and Blaschke, G.: Enantioseparation of mianserine analogues using capillary electrophoresis with neutral and charged cyclodextrin buffer modifiers. <sup>13</sup>C NMR study of the chiral recognition mechanism. *J. Chromatogr. A*, 717 (1995) 245-253.
- 1538 Hempel, G. and Blaschke, G.: Direct determination of zolpidem and its main metabolites in urine using capillary electrophoresis with laser-induced fluorescence detection. *J. Chromatogr. B*, 675 (1996) 131-137.
- 1539 Hempel, G. and Blaschke, G.: Enantioselective determination of zopiclone and its metabolites in urine by capillary electrophoresis. *J. Chromatogr. B*, 675 (1996) 139-146.
- 1540 Smith, N.W. and Evans, M.B.: The efficient analysis of neutral and highly polar pharmaceutical compounds using reversed-phase and ion-exchange electrochromatography. *Chromatographia*, 41 (1995) 193-203.
- 1541 Stalberg, O., Brotell, H. and Westerlund, D.: Capillary electrophoretic separation on basic drugs using surface-modified C<sub>8</sub> capillaries and derivatized cyclodextrins as structural/chiral selectors. *Chromatographia*, 40 (1995) 697-704.
- 1542 Stalberg, O., Westerlund, D., Rodby, U.-B. and Schmidt, S.: Determination of impurities in remoxipride by capillary electrophoresis using UV-detection and LIF-detection; principles to handle sample overloading effects. *Chromatographia*, 41 (1995) 287-294.
- 1543 Varesio, E. and Veuthey, J.-L.: Chiral separation of amphetamines by high-performance capillary electrophoresis. *J. Chromatogr. A*, 717 (1995) 219-228.
- 1544 Zhou, W., Liu, J. and Wang, E.: Determination of aminopyrine and its metabolite by capillary electrophoresis-electrochemical detection. *J. Chromatogr. A*, 715 (1995) 355-360.
- 1545 Zhou, W., Liu, J., Ding, J. and Wang, E.: (Electrochemical pre-treatment of carbon fiber microelectrode for amperometric detection of local anesthetics in capillary electrophoresis). *Fenxi Huaxue*, 23 (1995) 880-884; C.A., 123 (1995) 209015m.

See also 768, 916, 1535.

### 32f. Cytostatics

- 1546 Bogan, D.P., Thornes, R.D., Tegtmeyer, M., Schafer, E.A. and O'Kennedy, R.: Direct determination of 7-hydroxycoumarin and 7-hydroxycoumarin-glucuronide in urine by using capillary electrophoresis. *Analyst (Cambridge)*, 121 (1996) 243-247.

- 1547 Hartsell, T.L., Yalowich, J.C., Ritke, M.K., Martinez, A.J. and Schor, N.F.: Induction of apoptosis in murine and human neuroblastoma cell lines by the enediyne natural product neocarzinostatin. *J. Pharmacol. Exp. Ther.*, 275 (1995) 479-485.
- 1548 Hettiarachchi, K. and Cheung, A.P.: Precision in capillary electrophoresis with respect to quantitative analysis of suramin. *J. Chromatogr. A*, 717 (1995) 191-202.
- 1549 Lu, W., Poon, G.K., Carmichael, P.L. and Cole, R.B.: Analysis of tamoxifen and its metabolites by on-line capillary electrophoresis-electrospray ionization mass spectrometry employing nonaqueous media containing surfactants. *Anal. Chem.*, 68 (1996) 668-674.
- 1550 Okun, V.M., Aak, O.V. and Kozlov, V.Yu.: Determination of the anticancer drug prospidin in human tissue by high-performance capillary electrophoresis using derivatization. *J. Chromatogr. B*, 675 (1996) 313-319.
- 1551 Reubaert, J.L.E., Beijnen, J.H., Bult, A., Hop, E., Vermaas, R., Kellekule, Y., Kettenes-van den Bosch and Underberg, W.J.M.: Structural identification of the degradation products of the antitumor peptide antagonist [Arg<sup>6</sup>, D-Trp<sup>7,9</sup>, MePhe<sup>8</sup>] substance P(6-11). *Anal. Chem.*, 67 (1995) 4431-4436.

See also 1034.

### 32g. Other drug categories

- 1552 Hekman, C., Park, S., Teng, W.-Y., Guzman, N.A. and Rossi, T.: Degradation of lyophilized and reconstituted MACROSCINT® (DTPA-IgG): precipitation vs. glucosylation. *J. Pharm. Biomed. Anal.*, 13 (1995) 1249-1261.
- 1553 Porra, T., Quaglia, M.G. and Fanali, S.: Determination of fenfluramine enantiomers in pharmaceutical formulations by capillary zone electrophoresis. *Chromatographia*, 41 (1995) 383-388.
- 1554 Sandor, V., Flarakos, T., Batist, G., Wainer, I.W. and Lloyd, D.K.: Quantitation of the diastereoisomers of L-buthionine-(R,S)-sulfoxime in human plasma: a validated assay by capillary electrophoresis. *J. Chromatogr. B*, 673 (1995) 123-131.
- 1555 Strausbauch, M.A., Xu, S.J., Ferguson, J.E., Nunez, M.E., Machacek, D., Lawson, G.M., Wettstein, P.J. and Landers, J.P.: Concentration and separation of hypoglycemic drugs using solid-phase extraction-capillary electrophoresis. *J. Chromatogr. A*, 717 (1995) 279-291.

See also 768, 929, 976, 1525.

### 32h. Toxicological and forensic applications

- 1556 Vadillo, J.M., Gonzalez, M.E., Carretero, I. and Laserna, J.J.: Evaluation of micellar liquid chromatography and capillary zone electrophoresis for dope control in sport. *Mikrochim. Acta*, 118 (1995) 273-282; *C.A.*, 123 (1995) 220408n.

See also 1165, 1496, 1520, 1605.

### 32i. Plant extracts

- 1557 Chen, C.-T. and Sheu, S.-J.: Determination of glycyrrhizin and cinnamic acid in commercial Chinese herbal preparations by capillary electrophoresis. *Chin. Pharm. J. (Taipei)*, 47 (1995) 213-219; *C.A.*, 123 (1995) 296710a.

- 1558 Oehrle, S.A.: Analysis of ginkolides and bilobalides by capillary electrophoresis. *J. Liq. Chromatogr.*, 18 (1995) 2855-2859.
- 1559 Pacakova, V., Pechancova, J. and Stulik, K.: Capillary electrophoresis in allergen preparation research and in production control. *J. High Resolut. Chromatogr.*, 18 (1995) 582-586.
- 1560 Wojciechowski, H., Gumbinger, H.G., Vahlensieck, U., Winterhoff, H., Nahrstedt, A. and Kemper, F.H.: Analysis of the components of *Lycopus europaeus* L. in body fluids during metabolism studies. Comparison of capillary electrophoresis and high-performance liquid chromatography. *J. Chromatogr. A*, 717 (1995) 261-270.
- 1561 Zong, Y.Y., Yu, M.T., Zhu, Z.Q. and Che, C.T.: (Micellar electrokinetic capillary chromatographic separation and determination of Chinese traditional medicine-several *Rheum* species). *Yaoxue Xuebao*, 30 (1995) 594-598; *C.A.*, 123 (1995) 266261n.

See also 950.

### 33. CLINICO-CHEMICAL APPLICATIONS

#### 33a. General papers and reviews

See 1173.

#### 33b. Complex mixtures and profiling (single compounds by cross-reference only)

- 1562 Fey, S.J., Carlsen, J., Larsen, P.M., Jensen, U.A., Kjeldsen, K. and Haunsoe, S.: Two dimensional gel electrophoresis as a tool for molecular cardiology. In: Maunsoe, S. and Kjeldsen, K. (Editors), *Eur. Sect. Meet., Int. Soc. Heart Res., 15th 1994*, Mondazzi Editore, Bologna, 1994, pp. 9-16; *C.A.*, 123 (1995) 250473x.
- 1563 Nouadje, G., Rubie, H., Chatelut, E., Canal, P., Nertz, M., Puig, P. and Couderc, F.: Child cerebrospinal fluid analysis by capillary electrophoresis and laser-induced fluorescence detection. *J. Chromatogr. A*, 717 (1995) 293-298.

See also 978, 994, 999, 1014, 1016, 1017, 1023, 1127, 1157, 1159, 1163, 1190, 1203, 1245, 1345, 1372, 1400, 1451, 1452, 1453, 1454, 1466, 1471, 1478, 1481, 1484, 1597, 1603.

### 34. FOOD ANALYSIS

#### 34a. General papers and reviews

- 1564 Goiffon, J.-P.: (Primary analytical techniques: their applications in the quality control of food products and in fraud detection. Gas chromatography-mass spectrometry, ICP/MS, and capillary electrophoresis). *Ann. Falsif. Expert. Chim. Toxicol.*, 88, No. 931 (1995) 81-89; *C.A.*, 124 (1996) 7238w - a review with 3 refs.

- 1565 Hunter, J.B.: In focus and on the move: prospects for electrophoresis in the food industry. *IFT Basic Symp. Ser.*, 10 (1995) 227-295; *C.A.*, 123 (1995) 254751j - a review with many refs.

See also 855.

34b. Complex mixtures (single compounds by cross-reference only)

See 940, 941, 946, 968, 1136, 1139, 1177, 1183, 1206, 1434, 1457, 1502, 1513, 1598, 1605.

### 35. ENVIRONMENTAL ANALYSIS

35a. General papers and reviews

1566 Brumley, W.C.: Techniques with potential for handling environmental samples in capillary electrophoresis. *J. Chromatogr. Sci.*, 33 (1995) 670-685 - a review with 212 refs.

35c. Water pollution (complex mixtures; single compounds by cross-reference only)

1567 Fabry, L., Bloechl, P., Koester, L., Pahike, S., Kotz, L. and Rathmann, D.: Novel analytical applications of  $\mu$ -PCD and CZE in ultra clean Si-technologies. I. Monitoring ultra pure water with  $\mu$ -PCD. *Proc.-Electrochem. Soc.*, 95-30 (1995) 328-335; *C.A.*, 123 (1995) 328643z.

1568 Wu, J., Wong, M.K., Lee, H.K. and Ong, C.N.: Capillary zone electrophoretic determination of heterocyclic aromatic amines in rain. *J. Chromatogr. Sci.*, 33 (1995) 712-716.

1569 Zhang, Z., Sha, M., Zhu, R. and Xu, K.: (New treatment for high COD wastewater from electrophoresis paints). *Shanghai Huagong*, 20 (1995) 6-10; *C.A.*, 123 (1995) 207814x.

See also 1498, 1571, 1595, 1604, 1607, 1608, 1609.

35d. Soil pollution (complex mixtures; single compounds by cross-reference only)

See 937, 938.

### 36. SOME TECHNICAL PRODUCTS AND COMPLEX MIXTURES

36a. Surfactants

1570 Jeong, H., Kim, S.S., Lee, B.M., Kang, H.-C., Lee, W. and Kim, H.-D.: (Analysis of the anionic surfactants by capillary electrophoresis). *Anal. Sci. Technol.*, 7 (1994) 435-440; *C.A.*, 123 (1995) 202952f.

1571 Nitowski, A.J., Al-Mudamgha, A.A. and Chickering, P.K.: Capillary electrophoretic analysis of the sodium salt of naphthalene-sulfonic acid, formaldehyde polymer in waste water using a polyethylene glycol-coated capillary. *J. Chromatogr. A*, 717 (1995) 363-370.

1572 Salimi-Moosavi, H. and Cassidy, R.M.: Application of nonaqueous capillary electrophoresis to the separation of long-chain surfactants. *Anal. Chem.*, 68 (1996) 293-299.

1573 Shamsi, S.A. and Danielson, N.D.: Individual and simultaneous class separations of cationic and anionic surfactants using capillary electrophoresis with indirect photometric detection. *Anal. Chem.*, 67 (1995) 4210-4216.

36b. Antioxidants and preservatives

1574 Summanen, J., Vuorela, H., Hiltunen, R., Sirén, H. and Riekkola, M.L.: Determination of phenolic antioxidants by capillary electrophoresis with ultraviolet detection. *J. Chromatogr. Sci.*, 33 (1995) 704-711.

36c. Complex mixtures, technical products and unidentified compounds

1575 Lee, B.I. and Paik, U.: Silicate particles in nonaqueous media. *Trans. Mater. Res. Soc. Jpn.*, 14A (1994) 771-775; *C.A.*, 123 (1995) 206773w.

1576 Wilrich, C., Wortmann, G., Wortmann, F.-J. and Hoecker, H.: (Gel electrophoresis for determining the extent of damage in processing-damaged wool). *DWI Rep.*, 114 (1995) 575-586; *C.A.*, 123 (1995) 343160h.

See also 778, 900.

### 37. CELLS, CELLULAR PARTICLES AND SUPRAMOLECULAR STRUCTURES

1577 Afif, D., Canut, H. and Dizengremel, P.: Purification of intact chloroplasts from spruce (*Picea abies*) by free-flow electrophoresis. *Physiol. Plant.*, 93 (1995) 745-749; *C.A.*, 123 (1995) 309756x.

1578 Chang, H.-T. and Chrambach, A.: Feasibility of electrophoresis of a subcellular-sized particle in polymer solutions, using automated horizontal gel apparatus. *Appl. Theor. Electrophor.*, 5 (1995) 73-77; *C.A.*, 124 (1996) 25089c.

1579 Duran, J.D.G., Guindo, M.C. and Delgado, A.V.: Electrophoretic properties of colloidal dispersions of monodisperse zinc sulphide: effects of potential-determining ions and surface oxidation. *J. Colloid Interface Sci.*, 173 (1995) 436-442; *C.A.*, 123 (1995) 297983d.

1580 Hacley, V.A., Premachandran, R.S., Malghan, S.G. and Schiller, S.B.: A standard reference material for the measurement of particle mobility by electrophoretic light scattering. *Colloids Surf. A*, 98 (1995) 209-224; *C.A.*, 123 (1995) 238625r.

1581 Hlatshwayo, A.B.: Analytical separation of colloidal particles using capillary electrophoresis. Avail. *Univ. Microfilms Int.*, Order No. DA9519838, 1995, 333 p.; *C.A.*, 123 (1995) 274518s.

1582 Kuryama, A.: Method and apparatus for separating microorganisms from free DNA. *Jpn. Kokai Tokkyo Koho JP 07,203,965 [95,203,965] (Cl. C12N15/09)*, 08 Aug. 1995, Appl. 94/3,891, 19 Jan. 1994; 8 pp.; *C.A.*, 123 (1995) 248543b.

1583 Ohshima, H.: Electrophoresis of soft particles. *Adv. Colloid Interface Sci.*, 62 (1995) 189-235; *C.A.*, 124 (1996) 38306w - a review with 39 refs.

1584 Ohshima, H.: Electrophoretic mobility of soft particles. *Colloids Surf. A*, 103 (1995) 249-255; *C.A.*, 124 (1996) 38302s - a review with 22 refs.

1585 Penrod, S.L., Olson, T.M. and Grant, S.B.: Whole particle microelectrophoresis for small viruses. *J. Colloid Interface Sci.*, 173 (1995) 521-523; *C.A.*, 123 (1995) 280122z.

- 1586 Tsuda, T., Kitagawa, S., Hashimoto, O., Kiuchi, K. and Takahashi, T.: (Manipulation of a single cell based on its electrophoretic mobility and a micro-separation system for the analysis of cell inner fluid). *Kuromatogurafi*, 16 (1995) 200-201; C.A., 123 (1995) 334143c.
- 1587 Tulp, A., Verwoerd, D., Fernandez-Borja, M., Neefjes, J. and Hart, A.A.M.: High resolution density gradient electrophoresis of cellular organelles. *Electrophoresis (Weinheim)*, 17 (1996) 173-178.
- See also 779, 784, 833, 874, 1575.
- 38. INORGANIC COMPOUNDS**
- 38a. Cations**
- 1588 Baraj, B., Martínez, M., Sastre, A. and Aguilar, M.: Enhancement of the sensitivity of CZE determination of Cr(VI) by use of the stacking effect. *J. High Resolut. Chromatogr.*, 18 (1995) 675-678.
- 1589 François, C., Morin, P. and Dreux, M.: Separation of transition metal cations by capillary electrophoresis. Optimization of complexing agent concentrations (lactic acid and 18-crown-6). *J. Chromatogr. A*, 717 (1995) 393-408.
- 1590 Haumann, I. and Bächmann, K.: On-column chelation of metal ions in capillary zone electrophoresis. *J. Chromatogr. A*, 717 (1995) 385-391.
- 1591 Hirokawa, T., Hashimoto, Y. and Manabe, Y.: (Analysis for rare earth ions by capillary electrophoresis). *Kidorui*, 26 (1995) 362-363; C.A., 123 (1995) 305358w.
- 1592 Hirokawa, T., Xia, W., Nishiyama, F., Takemi, H., Ito, K. and Shojo, E.: Analysis of some rare-earth ores by the isotachophoresis-particle induced x-ray emission method. *Anal. Sci.*, 11 (1995) 801-807; C.A., 123 (1995) 357845x.
- 1593 Nasi, J.C. and Jacometti, A.: (Electrophoretic separation of some inorganic cations). *Rev. Bras. Farm.*, 76 (1995) 43-44; C.A., 123 (1995) 328568d.
- 1594 Pretswell, E.L. and Morrisson, A.R.: Optimizing the operating electrolyte composition for the determination of cations by capillary electrophoresis using an experimental design in conjunction with a simplex method. *Anal. Methods Instrum.* 1995, 2 (1995) 87-91; C.A., 124 (1996) 20480p.
- 1595 Tian, S. and Schwedt, G.: Determination of chromate in leather waste and sludge by ion chromatography and capillary electrophoresis. *J. Prakt. Chem./Chem.-Ztg.*, 337 (1995) 486-489; C.A., 123 (1995) 274658n.
- 1596 Timerbaev, A.R.: Separation of metal ions by capillary electrophoresis: an understanding of the basic principles. *J. Capillary Electrophor.*, 2 (1995) 165-174; C.A., 123 (1995) 328546v.
- 1597 Valaskova, I., Balazova, J. and Havranek, E.: Monitoring of lithium levels in human serum after therapy with lithium preparations by capillary isotachophoresis. *J. Chromatogr. B*, 674 (1995) 310-313.
- 1598 Yang, Q., Hartmann, C., Smeyers-Verbeke, J. and Massart, D.L.: Method development and validation for the determination of mineral elements in food and botanical materials by capillary electrophoresis. *J. Chromatogr. A*, 717 (1995) 415-425.

See also 754, 803, 861, 900, 1500.

**38b. Anions**

- 1599 Amram, M.B., Hagege, A., Lagarde, F. and Leroy, M.: Improvement of detection sensitivity of arsenic species using capillary zone electrophoresis. *Chem. Anal. (Warsaw)*, 40 (1995) 309-318; C.A., 123 (1995) 217136s.
- 1600 Bjerregaard, C., Møller, P. and Sørensen, H.: Determination of thiocyanate, iodide, nitrate and nitrite in biological samples by micellar electrokinetic capillary chromatography. *J. Chromatogr. A*, 717 (1995) 409-414.
- 1601 Guan, F., Wu, H. and Luo, Y.: Sensitive and selective method for direct determination of nitrite and nitrate by high-performance capillary electrophoresis. *J. Chromatogr. A*, 719 (1996) 427-433.
- 1602 Harrold, M., Stillian, J., Bao, L., Rocklin, R. and Avdalovic, N.: Capillary electrophoresis of inorganic anions and organic acids using suppressed conductivity detection. Strategies for selectivity control. *J. Chromatogr. A*, 717 (1995) 371-383.
- 1603 Leone, A.M., Francis, P.J., Furst, V.W., Rhodes, P. and Moncada, S.: Application of capillary ion analysis for measurement of nitrite and nitrate in plasma. *Portland Press Proc.*, 8(Biology of Nitric Oxide, 4) (1994) 224-227; C.A., 123 (1995) 192782j.
- 1604 Päntsä-Kallio, M. and Manninen, P.K.G.: Application of capillary electrophoresis in the analysis of phosphate in lake water. *Chemosphere*, 31 (1995) 3699-3707; C.A., 123 (1995) 295988k.
- 1605 Sasaki, H., Yonekubo, J. and Ando, M.: (Capillary electrophoresis for analysis of fish enteric material). *Kankyo Kagaku*, 5 (1995) 534-535; C.A., 123 (1995) 220369a.
- 1606 Soga, T., Inoue, Y. and Ross, G.A.: Analysis of halides, oxyhalides and metal oxoacids by capillary electrophoresis with suppressed electroosmotic flow. *J. Chromatogr. A*, 718 (1995) 421-428.
- 1607 Song, L., Ou, Q., Yu, W., Fang, L. and Jin, Y.: Determination of the petroleum tracers nitrate and thiocyanate in subterranean waters by capillary ion electrophoresis. *J. Chromatogr. A*, 715 (1995) 376-384.
- 1608 Van Holderbeke, M., Vanhoe, H., Moens, L. and Dams, R.: Determination of ten inorganic anions in drinking and waste waters with capillary zone electrophoresis (CZE) via indirect UV-detection. *Biomed. Chromatogr.*, 9 (1995) 281-282; C.A., 124 (1996) 15104q.
- See also 840, 996.
- 38c. Permanent and rare gases**
- 1609 Razee, S., Tamura, A. and Masujima, T.: Determination of dissolved oxygen in water samples using capillary electrophoresis. *Chem. Lett.*, (1995) 779-780; C.A., 123 (1995) 208265f.
- 38d. Volatile inorganic compounds**
- 1610 Dasgupta, P.K. and Kar, S.: Measurement of gases by a suppressed conductometric capillary electrophoresis separation system. *Anal. Chem.*, 67 (1995) 3853-3860.