

Electrophoresis

1. REVIEWS AND BOOKS

- 1734 Benedek, K. and Guttman, A.: High performance capillary electrophoresis: an overview. In: Swadeshi, J.K. (Editor), *HPLC: Pract. Ind. Appl.*, CRC, Boca Raton, 1997, pp. 305-346; C.A., 126 (1997) 112524a - a review with 182 ref.
- 1735 Howcroft, D. (Editor): *Electrophoresis*. IRL, Oxford, 1996, 120 p.; C.A., 126 (1997) 23323s.
- 1736 Jackim, E. (Editor): *Capillary Electrophoresis Procedures Manual*. Elsevier, Amsterdam, 1996, 306 pp.; C.A., 126 (1997) 274492r.
- 1737 Lahti, C.J.: Pulsed field gel electrophoresis in the clinical microbiology laboratory. *J. Clin. Lab. Anal.*, 10 (1996) 326-330; C.A., 126 (1997) 101247m - a review with 56 refs.
- 1738 Landers, J.P. (Editor): *Handbook of Capillary Electrophoresis* (Second Edition), CRC, Boca Raton, 1996, 736 pp.; C.A., 126 (1997) 168770v.
- 1739 Manz, A.: Ultimate speed and sample volumes in electrophoresis. *Biochem. Soc. Trans.*, 25 (1997) 278-281; C.A., 126 (1997) 274255r - a review with 31 refs.
- 1740 Patel, D. and Rickwood, D.: Electrophoresis methods. In: Price, N.C. (Editor), *Proteins Labfax*, Academic, San Diego, 1996, pp. 85-99; C.A., 126 (1997) 16408v.
- 1741 Perrett, D., Alfrzema, L., Hows, M. and Gibbons, J.: Capillary electrophoresis for small molecules and metabolites. *Biochem. Soc. Trans.*, 25 (1997) 273-278; C.A., 126 (1997) 274254q - a review with 22 refs.
- See also 1742, 1745, 1782, 1829, 1850, 1851, 1852, 1877, 1878, 1914, 1977, 2012, 2108, 2264, 2447, 2511, 2512, 2554, 2573, 2582, 2585.

2. FUNDAMENTALS, THEORY AND GENERAL

2a. General

- 1742 Andrews, A.T.: Switch on to separate: the development of electrophoretic methods of analysis. *Biochem. Soc. Trans.*, 25 (1997) 243-248; C.A., 126 (1997) 274252n - a review without refs.
- 1743 Coleman, D. (Editor): *Directory of Capillary Electrophoresis: New, Completely Revised Edition, TrAC (Supplements, No. 3)*, Elsevier, Amsterdam, 1996, 194 pp.; C.A., 126 (1997) 287367d.
- 1744 Corradini, D.: HPLC and CE - match winners in bioseparations. *LC-GC Int.*, 10 (1997) 146-148.
- 1745 Schmidt, D.: (Pulsed-field gel electrophoresis: principle and possible applications in medical microbiology). *MTA*, 12 (1997) 94-98; C.A., 126 (1997) 222401r - a review with 7 refs.

- 1746 Vigh, G., Rawjee, Y.Y. and Williams, R.L., Jr.: Increased efficiency of electrophoretic separations by mobility matching. U.S. US 5,614,072 (Cl. 204-450; GO1N27/26), 25 Mar. 1997, Appl. 359,641, 20 Dec. 1994; 29 pp.; C.A., 126 (1997) 287377g.
- 1747 Von Heeren, F., Verpoorte, E., Manz, A. and Thormann, W.: Characterization of electrophoretic sample injection and separation in a gel-filled cyclic planar microstructure. *J. Microcolumn Sep.*, 8 (1996) 373-381; C.A., 126 (1997) 54256b.
- 1748 Williams, R.L., Child, B., Dose, E.V., Guiochon, G. and Vigh, G.: Peak shape distortions in the capillary electrophoretic separations of strong electrolytes when the background electrolyte contains two strong electrolyte co-ions. *Anal. Chem.*, 69 (1997) 1347-1354.
- 1749 Yarmola, E., Calabrese, P.P., Chrambach, A. and Weiss, G.H.: Interaction with the matrix: the dominant factor in macromolecular band spreading in gel electrophoresis. *J. Phys. Chem. B*, 101 (1997) 2381-2387; C.A., 126 (1997) 222500x.

See also 1739, 1821.

2b. Thermodynamics and theoretical relationships

- 1750 Cannon-Carlson, S. and Tang, J.: Modification of the Laemmli sodium dodecyl sulfate-polyacrylamide gel electrophoresis procedure to eliminate artifacts on reducing and nonreducing gels. *Anal. Biochem.*, 246 (1997) 146-148.
- 1751 Kuzev, L.V.: Two forms of Rayleigh law in separating solid particles in pulp under sinusoidal vibrations. In: Kemal, M. (Editor), *Changing Scopes Miner. Process., Proc. Int. Miner Process. Symp.*, 6th Balkema, Rotterdam, 1996, pp. 609-612; C.A., 126 (1997) 159979t.
- 1752 Vaidya, D.S., Nitsche, J.M., Diamond, S.L. and Kofke, D.A.: Perturbation solution to the convection-diffusion equation with moving fronts. *AIChE J.*, 43 (1997) 631-644; C.A., 126 (1997) 226961w.

See also 1819, 1828, 1843, 1844, 1845, 1849, 1854, 1861, 1862, 1864, 2008, 2509.

2c. Relationship between structure and electrophoretic behaviour

See 1828, 1879, 2380.

2d. Measurement of physico-chemical and related values

- 1753 Wisdom, G.B.: Molecular weight determinations using polyacrylamide gel electrophoresis with tris-tricine buffers. *Methods Mol. Biol. (Totowa)*, 73 (1997) 97-100; C.A., 126 (1997) 44561h.

See also 1869, 2471.

3. GENERAL TECHNIQUES

3a. Apparatus and accessories

- 1754 Aksberg, A.: Clamp for electrophoresis systems. *PCT Int. Appl. WO 97 12,236* (Cl. G01N27/447), 3 Apr. 1997, SE Appl. 95/3,312, 25 Sep. 1995; 12 pp.; *C.A.*, 126 (1997) 287373c.
- 1755 Bashkin, J.S., Bartosiewicz, M., Roach, D., Leong, J., Barker, D. and Johnston, R.: Implementation of a capillary array electrophoresis instrument. *J. Capillary Electrophor.*, 3 (1996) 61-68; *C.A.*, 126 (1997) 44558n.
- 1756 Bryning, Z. and Cromer, R.: Electrophoretic display utilizing phase separation of liquids. *U.S. US 5,582,700* (Cl. 204-450; G01N27/26), 10 Dec. 1996, Appl. 543,707, 16 Oct. 1995; 27 p.; *C.A.*, 126 (1997) 137752m.
- 1757 De Jongh, F.C.M.: Method and apparatus for preparation of analyte-containing gel blocks. *Meth. Appl. NL 10 01,699* (Cl. G01N33/48), 11 Jul. 1996, NL Appl. 94/1,936, 18 Nov. 1994; 41 p.; *C.A.*, 126 (1997) 154817d.
- 1758 Huang, M., Bigelow, M. and Byers, M.: Application of a self-assembled bilayer coating on a fused-silica capillary surface for capillary electrophoresis. *Am. Lab. (Shelton)*, 28 (1996) 32-36; *C.A.*, 126 (1997) 44557m.
- 1759 Izmailov, A.M., Waterhouse, P. and Zaleski, H.: Electrophoresis gels and gel holders having fiber spacers and method of making them. *U.S. US 5,618,398* (Cl. 204-470; G01N27/26), 8 Apr. 1997, Appl. 571,297, 12 Dec. 1995; 12 pp.; *C.A.*, 126 (1997) 248568a.
- 1760 Liu, H. and Liu, W.: (Assembling of high-performance capillary electrophoresis conductometric apparatus and its application to the determination of alkali metal ions and amino acids. *Fenxi Huaxue*, 24 (1996) 1354-1359; *C.A.*, 126 (1997) 112407q.
- 1761 Pentoney, S.L., Jr. and Konrad, K.D.: Electrophoresis capillary tube with a conductive tip. *PCT Int. Appl. WO 97 03,352* (Cl. G01N27/447), 30 Jan. 1997, US Appl. 501, 836, 13 Jul. 1995; 19 p.; *C.A.*, 126 (1997) 165907j.
- 1762 Righetti, P.G., Nembri, F. and Bossi, A.: A multimembrane enzyme reactor operating in an electric field. *Chromatographia*, 45 (1997) 441-444.
- 1763 Sanchez, J.-C., Rouge, V., Pisteur, M., Ravier, F., Tonella, L., Moosmayer, M., Wilkins, M.R. and Hochstrasser, D.F.: Improved and simplified in-gel sample application using reswelling of dry immobilized pH gradients. *Electrophoresis (Weinheim)*, 18 (1997) 324-327.
- 1764 Swedberg, S.A., Kaltenbach, P., Witt, K.E., Bek, F. and Mittelstadt, L.S.: Fully integrated miniaturized planar liquid sample handling and analysis device. *U.S. US 5,571,410* (Cl. 210-198.2; B01D15/08), 5 Nov. 1996, US Appl. 326,111, 19 Oct. 1994; 35 p.; *C.A.*, 126 (1997) 48663r.
- 1765 Togawa, Y. and Miura, M.: Apparatus for collecting samples by gel electrophoresis. *U.S. US 5,587,062* (Cl. 204-613, G01N27/26), 24 Dec. 1996, Appl. 592,872, 24 Jan. 1996; 6 p.; *C.A.*, 126 (1997) 132960t.

See also 1787, 1794, 1796, 1797, 1808, 1823, 1833, 2103, 2588.

3b. Detectors and detection procedures

- 1766 Boring, C.B. and Dasgupta, P.K.: An affordable high-performance optical absorbance detector for capillary systems. *Anal. Chim. Acta*, 342 (1997) 123-132.
- 1767 Cathey, J.C., Schmidt, C.A. and DeWoody, J.A.: Incorporation of bromophenol blue enhances visibility of polyacrylamide gels. *BioTechniques*, 22 (1997) 222; *C.A.*, 126 (1997) 222491v.
- 1768 Desbene, P.L. and Morin, C.J.: (Indirect fluorometric detection of organic and inorganic anions separated by capillary electrophoresis). *Spectra Anal.*, 25 (1996) 15-20; *C.A.*, 126 (1997) 258108q.
- 1769 Haugland, R.P., Singer, V.L., Jones, L.J. and Steinberg, T.H.: Merocyanine dye protein stains. *PCT Int. Appl. WO 96 36,882* (Cl. G01N33/68), 21 Nov. 1996, US Appl. 444,895, 19 May 1995; 47 p.; *C.A.*, 126 (1997) 44635k.
- 1770 Hook, L., Ross, M., Mislan, D., Lampron, F. and Vecoli, C.: Rapid image analysis, databasing, and comparison of complex one-dimensional banding patterns. *Am. Biotechnol. Lab.*, 15 (1997) 15-16; *C.A.*, 126 (1997) 195799t.
- 1771 Jin, W. and Chen, H.: Theory concerning the current for an end-column amperometric detector with a disk working electrode in capillary zone electrophoresis. *J. Chromatogr. A*, 765 (1997) 307-314.
- 1772 Kan, H., Berniolles, S., Nunes, J. and Tong, W.G.: Sensitive wave-mixing detector for capillary electrophoresis and liquid chromatography. *Proc. SPIE-Int. Soc. Opt. Eng.*, 2835 (1996) 135-142; *C.A.*, 126 (1997) 112535e.
- 1773 Kibler, M., Lochman, H., Bazzanella, A., Blum, C. and Baechmann, K.: (Application and limits of laser-induced fluorescence for capillary electrophoresis). *GIT Fachz. Lab.*, 40 (1996) 1004-1007; *C.A.*, 126 (1997) 112533c.
- 1774 Okon, E.B., Marjanovic, V., Hranisavljevic, J. and Vucelic, D.: (Silver staining of proteins separate by polyacrylamide gel electrophoresis: mathematical model). *Biokhimiya (Moscow)*, 61 (1996) 2082-2091.
- 1775 Park, S.: Electrochemical detection for capillary electrophoresis. Avail. *Univ. Microfilms Int.*, Order No. DA967335, 1996, 261 p.; *C.A.*, 126 (1997) 83765x.
- 1776 Regehr, M.F. and Regnier, F.E.: Chemiluminescent detection for capillary electrophoresis and EMMA enzyme assays. *J. Capillary Electrophor.*, 3 (1996) 117-124; *C.A.*, 126 (1997) 274477q.
- 1777 Song, J.M., Inoue, T., Kawazumi, H. and Ogawa, T.: Highly sensitive detection using laser two-photon excited fluorescence in capillary electrophoresis. *J. Chromatogr. A*, 765 (1997) 315-319.
- 1778 Uchiyama, K., Terada, C., Ohsawa, K. and Imaeda, K.: (Photo-acoustic measurement of silver stained layer in polyacrylamide gels). *Bunseki Kagaku*, 45 (1996) 1059-1062; *C.A.*, 126 (1997) 16481p.
- 1779 Voegel, P.D., Zhou, W. and Baldwin, R.P.: Integrated capillary electrophoresis/electrochemical detection with metal film electrodes directly deposited onto the capillary tip. *Anal. Chem.*, 69 (1997) 951-957.

See also 1816, 1896, 1897, 1943, 1988, 1992, 1994, 2000, 2351, 2443, 2509.

3c. Stabilization media for electrophoresis

- 1780 Bächmann, K. and Göttlicher, B.: New particles as pseudostationary phase for electrokinetic chromatography. *Chromatographia*, 45 (1997) 249-254.
- 1781 Bambeck, G.S.: Electrophoresis separation gel and a method for preparing an electrophoresis separation gel. U.S. US 5,589,104 (Cl. 252-315.1: B01J13/00), 31 Dec. 1996, Appl. 177,271, 30 Dec. 1993; 8 p.; C.A., 126 (1997) 154791r.
- 1782 Cabrera, K., Wieland, G., Majors, R.E., Finkler, C., Schneider, P. and Engelhardt, H.: (HPLC and CE columns). *Nachr. Chem., Tech. Lab.*, 44 (Suppl. 1) (1996) S83-S89; C.A., 126 (1997) 152200y - a review with 20 refs.
- 1783 Ericson, C., Liao, J.-L., Nakazato, K. and Hjertén, S.: Preparation of continuous beds for electrochromatography and reversed-phase liquid chromatography of low-molecular-mass compounds. *J. Chromatogr. A*, 767 (1997) 33-41.
- 1784 Gautsch, J.W. and Rehan, S.F.H.: Comb elements rotating in position to place selected slit arrays in the gel of an electrophoresis agarose gel tray, particularly as also serve as spacers between stacked trays. U.S. US 5,618,399 (Cl. 204-620; GO1N27/26), 8 Apr. 1997, US Appl. 377,866, 25 Jan. 1995; 10 pp.; C.A., 126 (1997) 248569b.
- 1785 Hooper, H.H., Pacetti, S., Soane, D.S. and Bae, Y.C.: Separation media for electrophoresis. U.S. US 5,569,364 (Cl. 204-455; C25B9/00), 29 Oct. 1996, US Appl. 971,956, 5 Nov. 1992; 23 p.; C.A., 126 (1997) 20593u.
- 1786 Hu, Y.-G. and Deng, Y.-Z.: (New technique of pre-polymerization for preparation of polyacrylamide gel-filled capillaries for capillary gel electrophoresis). *Gaojing Xuexiao Huaxue Xuebao*, 18 (1997) 207-211; C.A., 126 (1997) 274360w.
- 1787 Izmailov, A.M. and Zaleski, H.: Electrophoresis gels and gel holders having adhesive affixed fiber spacers and their preparation. U.S. US 5,599,434 (Cl. 204-470; GO1N27/26), 4 Feb. 1997, Appl. 571,132, 12 Dec. 1995; 10 pp.; C.A., 126 (1997) 204130x.
- 1788 Madabhushi, R.S., Menchen, S.M., Efcavitch, J.W. and Grossman, P.D.: Polymers for separation of biomolecules by capillary electrophoresis. U.S. US 5,567,292 (Cl. 204-451; C07K1/26), 22 Oct. 1996, US Appl. 170,078, 17 Dec. 1993; 37 p.; C.A., 126 (1997) 16500u.
- 1789 Maruska, A. and Pyell, U.: The development of microparticulate cellulose-based packing materials and evaluation of potential use in capillary electrophoresis. *Chromatographia*, 45 (1997) 229-234.
- 1790 Miller, B.S., Hsu, A.K.H., Ferrari, E. and Diaz-Torres, M.R.: Solid medium labeling applied to two-dimensional gel electrophoresis. *Anal. Biochem.*, 245 (1997) 245-247.
- 1791 Muijselaar, P.G., Claessens, H.E. and Cramers, C.A.: Evaluation and characterization of pseudo-stationary phases in micellar electrokinetic chromatography. *Chromatographia*, 45 (1997) 433-454.
- 1792 Takagi, T.: (Nonionic polymer-containing electrolyte solution and capillary electrophoresis using it). *Jpn. Kokai Tokkyo Koho JP 08,145,946 [96,145,946] (Cl. GO1N27/447)*, 7 Jun. 1996, Appl. 94/280,849, 15 Nov. 1994; 5 pp.; C.A., 125 (1996) 137218w.

- 1793 Tanaka, N., Iwasaki, H., Nakagawa, K., Hosoya, K. and Araki, T.: (Selectivity of starburst dendrimer derivatives as pseudo-stationary phase in electrokinetic chromatography). *Kuromatogurai*, 17 (1996) 302-303; C.A., 126 (1997) 154630n.
- 1794 Zhou, D.: Gradient generator. U.S. US 5,597,480 (Cl. 210-198.2; B01D15/08), 28 Jan. 1997, Appl. 229,198, 18 Apr. 1994; 6 pp.; C.A., 126 (1997) 173512s.

For additional information see C.A.:
126 (1997) 258106n.

See also 1757.

3d. Quantitative analysis

- 1795 Kunkel, A., Degenhardt, M., Schirm, B. and Wätzig, H.: Performance of instruments and aspects of methodology and validation in quantitative capillary electrophoresis. An update. *J. Chromatogr. A*, 768 (1997) 17-27.

See also 1982, 2389.

3e. Preparative scale electrophoresis

- 1796 Chang, H.-T., Chen, N., Sullivan, J.V. and Chrambach, A.: Preparative electrophoresis in a concentrated polymer solution: automated procedure for microsome isolation. *Anal. Biochem.*, 247 (1997) 111-114.
- 1797 Ewing, A.G., Gavin, P.F., Hietpas, P.B. and Bullard, K.M.: Continuous separations in microfabricated channels for monitoring ultrasmall biological environments. *Nat. Med. (N.Y.)*, 3 (1997) 97-99; C.A., 126 (1997) 141643u.

See also 1952, 2113, 2508.

3f. Programmed voltage and buffer gradients

See 1762, 2422.

4. SPECIAL TECHNIQUES

4a. Automation

See 2451.

4b. Computerization and modelling

- 1798 Wilkins, M.R., Lindskog, I., Gasteiger, E., Bairoch, A., Sanchez, J.-C., Hochstrasser, D.F. and Appel, R.D.: Detailed peptide characterization using PEPTIDEMASS - a World-Wide-Web-accessible tool. *Electrophoresis (Weinheim)*, 18 (1997) 403-408.

See also 1748, 1770, 1774, 1838, 1843, 1873, 1875, 1983, 2019, 2078, 2087, 2117, 2129, 2130, 2152, 2173, 2184, 2425, 2450.

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

- 1799 Courchesne, P.L., Luethy, R. and Patterson, S.D.: Comparison of in-gel and on-membrane digestion methods at low to sub-pmol level for subsequent peptide and fragment-ion mass analysis using matrix-assisted laser-desorption/ionization mass spectrometry. *Electrophoresis (Weinheim)*, 18 (1997) 369-381.
- 1800 Figeys, D. and Aebersold, R.: High sensitivity identification of proteins by electrospray ionization tandem mass spectrometry: initial comparison between an ion trap mass spectrometer and a triple quadrupole mass spectrometer. *Electrophoresis (Weinheim)*, 18 (1997) 360-368.
- 1801 Henion, J.D., Sheppard, R.L. and Wachs, T.: Capillary electrophoresis-mass spectrometry interface. *PCT Int. Appl.* WO 96 36,425 (Cl. B01D59/44), 21 Nov. 1996, US Appl. 444,452, 19 May 1995; 15 p.; C.A., 126 (1997) 52631w.
- 1802 Hofstadler, S.A., Severs, J.C., Smith, R.D., Swanek, F.D. and Ewing, A.G.: High performance Fourier transform ion cyclotron resonance mass spectrometric detection for capillary electrophoresis. *J. High Resolut. Chromatogr.*, 19 (1996) 617-621.
- 1803 Kar, S. and Dasgupta, P.K.: Direct coupling of ion chromatography with suppressed conductometric capillary electrophoresis. *J. Microcolumn Sep.*, 8 (1996) 561-568; C.A., 126 (1997) 232755y.
- 1804 Li, G., Waltham, M., Anderson, N.L., Unsworth, E., Treston, A. and Weinstein, J.N.: Rapid mass spectrometric identification of proteins from two-dimensional polyacrylamide gels after in gel proteolytic digestion. *Electrophoresis (Weinheim)*, 18 (1997) 391-402.
- 1805 Lord, G.A., Gordon, D.B., Myers, P. and King, B.W.: Tapers and restrictors for capillary electrochromatography and capillary electrochromatography-mass spectrometry. *J. Chromatogr. A*, 768 (1997) 9-16.
- 1806 McLeod, G.S., Axelsson, J., Self, R. and Derrick, P.J.: Comparison of novel sampling methods for the analysis of capillary electrophoresis fractions by matrix-assisted laser desorption/ionization [MALDI] time-of-flight mass spectrometry. *Rapid Commun. Mass Spectrom.*, 11 (1997) 214-218; C.A., 126 (1997) 222560s.
- 1807 Ogorzalek Loo, R.R., Mitchell, C., Stevenson, T.I., Martin, S.A., Hines, W.M., Juhasz, P., Patterson, D.H., Peltier, J.M., Loo, J.A. and Andrews, P.C.: Sensitivity and mass accuracy for proteins analyzed directly from polyacrylamide gels: implications for proteome mapping. *Electrophoresis (Weinheim)*, 18 (1997) 382-390.
- 1808 Ramsey, R.S. and Ramsey, J.M.: Generating electrospray from microchip devices using electroosmotic pumping. *Anal. Chem.*, 69 (1997) 1174-1178.
- 1809 Tomlinson, A.J., Benson, L.M., Jameson, S., Johnson, D.H. and Naylor, S.: Utility of membrane preconcentration-capillary electrophoresis-mass spectrometry in overcoming limited sample loading for analysis of biologically derived drug metabolites, peptides, and proteins. *J. Am. Soc. Mass Spectrom.*, 8 (1997) 15-24; C.A., 126 (1997) 141703p.
- 1810 Xiong, S., Li, J. and Cheng, J.: (Studies on the coupling technique between high performance capillary electrophoresis and charge-coupled device detector V. Multicomponent analysis of overlapped peaks with multi-variable linear regression). *Fenxi Ceshi Xuebao*, 15 (1996) 69-73; C.A., 126 (1997) 139282g.

1811 Yoo, Y.S., Han, Y.S., Suh, M.J. and Park, J.: Analysis of phosphopeptides by capillary electrophoresis and matrix-assisted laser-desorption ionization-time-of-flight mass spectrometry. *J. Chromatogr. A*, 763 (1997) 285-293.

1812 Zhu, J. and Wiederin, D.R.: System for interfacing capillary zone electrophoresis and inductively coupled plasma-mass spectrometer sample analysis systems, and method of use. *U.S. US 5,597,467 (Cl. 205-603; GO1N27/26)*, 28 Jan. 1997, Appl. 391,152, 21 Feb. 1995; 16 pp.; C.A., 126 (1997) 168785d.

See also 1829, 1891, 1952, 1981, 1985, 1986, 1995, 2009, 2071, 2133, 2183, 2307, 2475, 2492, 2510, 2517, 2560, 2577.

4d. Affinity electrophoresis

1813 Taga, A., Yasueda, S.-I. and Honda, S.: (Binding constant estimation by competitive ligand affinity capillary electrophoresis). *Kuromatogurafu*, 17 (1996) 326-327; C.A., 126 (1997) 154698r.

See also 2148.

4e. Capillary zone electrophoresis and electrokinetic chromatography

1814 Agnew-Heard, K.A., Sánchez Peña, M., Shamsi, S.A. and Warner, I.M.: Studies of polymerized sodium N-undecylenyl-L-valinate in chiral micellar electrokinetic capillary chromatography of neutral, acidic, and basic compounds. *Anal. Chem.*, 69 (1997) 958-964.

1815 Altria, K.D., Bryant, S.M., Clark, B.J. and Kelly, M.A.: The care and maintenance of CE capillaries. *LC-GC Int.*, 10 (1997) 157-162.

1816 Aupias, J.: Optimization of cation detection by capillary zone electrophoresis with individual UV absorbance. *Chromatographia*, 44 (1997) 303-312.

1817 Babkin, O.E., Drozdova, L.A. and Popov, N.S.: (Determination of composition of electrodeposited compounds by using capillary electrophoresis). *Lakokras. Mater. Ikh Primen.*, (1996) 4-5; C.A., 126 (1997) 252431t.

1818 Beck, G.M. and Neau, S.H.: Lambda-carrageenan: a novel chiral selector for capillary electrophoresis. *Chirality*, 8 (1996) 503-510; C.A., 126 (1997) 148557c.

1819 Beckers, J.L.: Calculation of the composition of sample zones in capillary zone electrophoresis. IV. Weak acids and system characteristics. *J. Chromatogr. A*, 764 (1997) 111-126.

1820 Chernoglazov, V.M. and Nesterenko, P.N.: (Development of capillary electrophoresis method and apparatus). *Ross. Khim. Zh.*, 40 (1996) 100-110; C.A., 126 (1997) 274257t.

1821 Colombara, R., Tavares, M.F.M., Massaro, S. and Rubim, J.C.: Method development strategy for the analysis of anionic solutes by capillary electrophoresis. *J. Capillary Electrophor.*, 3 (1996) 147-153; C.A., 126 (1997) 274369f.

1822 Colyer, C.L.: Unusual peaks and baseline shifts in capillary electrophoresis. *J. Capillary Electrophor.*, 3 (1996) 131-137; C.A., 126 (1997) 274368e.

1823 Cordova, E., Gao, J. and Whitesides, G.M.: Noncovalent polycationic coatings for capillaries in capillary electrophoresis of proteins. *Anal. Chem.*, 69 (1997) 1370-1379.

- 1824 Dadoo, R., Yan, C., Zare, R.N., Anex, D.S., Rakestraw, D.J. and Hux, G.A.: Advances towards the routine use of capillary electrochromatography. *LC-GC Int.*, 10 (1997) 164-174.
- 1825 Demorest, D.M., Moring, S.E. and Chiesa, C.: Conditioning silica surfaces with metal silicates for increasing electro-osmotic flow rate. *U.S. US 5,578,179 (Cl. 204-451; G01N27/26)*, 26 Nov. 1996; *Appl. 501,674, 12 Jul. 1995; 24 p.; C.A.*, 126 (1997) 20640g.
- 1826 Esaka, Y., Tanaka, K., Uno, B., Goto, M. and Kano, K.: Sodium dodecyl sulfate -Tween 20 mixed micellar electrokinetic chromatography for separation of hydrophobic cations: application to adrenaline and its precursors. *Anal. Chem.*, 69 (1997) 1332-1338.
- 1827 Fang, X.H., Huang, A.J. and Sun, Y.L.: Preparation and evaluation of polyethylene glycol acrylate coated capillary zone electrophoresis column. *Chin. Chem. Lett.*, 7 (1996) 1109-1112; *C.A.*, 126 (1997) 168672q.
- 1828 Ferguson, P.D., Goodall, D.M. and Loran, J.S.: Systematic approach to links between separations in capillary electrophoresis and liquid chromatography. IV. Application of binding constant-retention factor relationship to the separation of 2-, 3- and 4-methylbenzoate anions using β -cyclodextrin as selector. *J. Chromatogr. A*, 768 (1997) 29-38.
- 1829 Finkler, C. and Gittel, C.: (Online coupling of capillary zone electrophoresis and mass spectrometry (CE-MS)). *LaborPraxis*, 20 (1996) 24-30; *C.A.*, 126 (1997) 83804j - a review with 10 refs.
- 1830 Göttlicher, B. and Bächmann, K.: Investigation of the separation efficiency of hydrophobic compounds in suspension electrokinetic chromatography. *J. Chromatogr. A*, 768 (1997) 320-324.
- 1831 Govindaraju, K., Ahmed, A. and Lloyd, D.K.: Electroosmotic flow mobilities in open and packed capillaries with spermine and other amine flow modifiers. *J. Chromatogr. A*, 768 (1997) 3-8.
- 1832 Guan, F., Wu, H. and Luo, Y.: A novel strategy for systematic optimization of micellar electrokinetic chromatography separations. *Anal. Chim. Acta*, 342 (1997) 133-144.
- 1833 Hadwiger, M.E., Park, S., Torchia, S.R. and Lunte, C.E.: Simultaneous determination of the elimination profiles of the individual enantiomers of racemic isoproterenol using capillary electrophoresis and microdialysis sampling. *J. Pharm. Biomed. Anal.*, 15 (1996) 621-629.
- 1834 Hodgson, A.: Capillary electrophoresis. *Chem. Rev. (Dedington)*, 6 (1997) 9-14; *C.A.*, 126 (1997) 222506d.
- 1835 Issaq, H.I., Horng, P.L.C., Janini, G.M. and Muschik, G.M.: Micellar electrokinetic chromatography using mixed sodium dodecyl sulfate and sodium cholate. *J. Liq. Chromatogr. Relat. Technol.*, 20 (1997) 167-182.
- 1836 Iu, H. and Dasgupta, P.K.: A falling drop for sample injection in capillary zone electrophoresis. *Anal. Chem.*, 69 (1997) 1211-1216.
- 1837 Jegle, U., Grimm, R., Godel, H., Schuster, R., Ross, G. and Soga, T.: Poly(vinyl alcohol)-coated capillaries - a solution for many application areas in capillary electrophoresis. *LC-GC Int.*, 10 (1997) 176-188.
- 1838 Liang, H., Wang, Z.-G., Lin, B.-C., Xu, C.-G. and Fu, R.-N.: Non-equilibrium thermodynamic separation model in capillary electrophoresis. *J. Chromatogr. A*, 763 (1997) 237-251.
- 1839 Liu, Q., Lin, F. and Hartwick, R.A.: Free solution capillary electrophoretic separation of basic proteins and drugs using cationic polymer coated capillaries. *J. Liq. Chromatogr. Relat. Technol.*, 20 (1997) 707-718.
- 1840 Liu, Q., Lin, F. and Hartwick, R.A.: Poly(diallyldimethylammonium chloride) as a cationic coating for capillary electrophoresis. *J. Chromatogr. Sci.*, 35 (1997) 126-130.
- 1841 Marzilli, L.A., Bedard, P. and Mabrouk, P.A.: Learning to learn: an introduction to capillary electrophoresis. *Chem. Educ. [Electronic Publication]*, 1 (1996) No pp., *C.A.*, 126 (1997) 199069c.
- 1842 Morris, V.M., Hargreaves, C., Overall, K., Marriott, P.J. and Hughes, J.G.: Optimization of the capillary electrophoresis separation of ranitidine and related compounds. *J. Chromatogr. A*, 766 (1997) 245-254.
- 1843 Muijselaar, P.G., Claessens, H.A. and Cramers, C.A.: Characterization of pseudostationary phases in micellar electrokinetic chromatography by applying linear solvation energy relationships and retention indexes. *Anal. Chem.*, 69 (1997) 1184-1191.
- 1844 Muijselaar, P.G., Claessens, H.A. and Cramers, C.A.: Migration behaviour of micelle counterions in micellar electrokinetic chromatography: influence on micelle mobility, efficiency and selectivity. *J. Chromatogr. A*, 764 (1997) 127-133.
- 1845 Muijselaar, P.G., van Straten, M.A., Claessens, H.A. and Cramers, C.A.: Determination of diffusion coefficients and separation numbers in micellar electrokinetic chromatography. *J. Chromatogr. A*, 766 (1997) 187-195.
- 1846 Muijselaar, P.G., Verhelst, H.B., Claessens, H.A. and Cramers, C.A.: Separation of hydrophobic compounds by electrokinetic chromatography with tetraalkylammonium ions. *J. Chromatogr. A*, 764 (1997) 323-329.
- 1847 Ossicini, L. and Fanali, S.: Enantiomeric separations by electrophoretic techniques. *Chromatographia*, 45 (1997) 428-432.
- 1848 Peng, X. and Chen, D.D.Y.: Variance contributed by pressure induced injection in capillary electrophoresis. *J. Chromatogr. A*, 767 (1997) 205-216.
- 1849 Peng, X., Bowser, M.T., Britz-Mckibbin, P., Bebault, G.M., Morris, J.R. and Chen, D.D.Y.: Quantitative description of analyte migration behavior based on dynamic complexation in capillary electrophoresis with one or more additives. *Electrophoresis (Weinheim)*, 18 (1997) 706-716.
- 1850 Pyell, U.: (MEKC and CEC. Miniaturized separation techniques). *Nachr. Chem. Tech. Lab.*, 45 (1997) 33-36; *C.A.*, 126 (1997) 206925j - a review with 23 refs.
- 1851 Saithoh, T.: (Micellar system in analytical separation). *Dojin News*, 82 (1996) 3-0; *C.A.*, 126 (1997) 154474x - a review with 18 refs.
- 1852 Valkó, I.E., Sirén, H. and Riekkola, M.-L.: Capillary electrophoresis in non-aqueous media: an overview. *LC-GC Int.*, 10 (1997) 190-196 - a review with 39 refs.
- 1853 Van Hove, E., Szics, R. and Sandra, P.: Alcohol modifiers in MEKC with SDS as surfactant. Study on the influence of the alcohol chain length (C1-C12). *J. High Resolut. Chromatogr.*, 19 (1996) 674-678.
- 1854 Veraart, J.R., Gooijer, C. and Lingeman, H.: Thermostating in capillary electrophoresis. *Chromatographia*, 44 (1997) 129-134.

- 1855 Weinberger, R.: Separations solutions. Micellar electrokinetic capillary chromatography (MECC). *Am. Lab. (Shelton)*, 28 (1996) 20P, 20R; *C.A.*, 126 (1997) 44503r.
- 1856 Whynot, D.M., Hartwick, R.A. and Bane, S.: Capillary isoelectric focusing with anionic coated capillaries. *J. Chromatogr. A*, 767 (1997) 231-239.
- 1857 Williams, R.L. and Vigh, G.: N-(Polyethyleneglycol monomethyl ether)-N-methylmorpholinium-based background electrolytes in capillary electrophoresis. *J. Chromatogr. A*, 763 (1997) 253-259.
- 1858 Yang, Q.: (Model 180 high-performance capillary electrophoresis system). *Fenxi Ceshi Yiqi Tongxun*, 6 (1996) 35-41; *C.A.*, 126 (1997) 152205d.
- 1859 Zhang, H. and Dubin, P.L.: Analysis of polydispersity of mixed micelles of TX-100/SDS and C₁₂E₈/SDS by capillary electrophoresis. *J. Colloid Interface Sci.*, 186 (1997) 264-270; *C.A.*, 126 (1997) 283056d.
- 1860 Zhang, H., Jia, L. and Hu, Z.: The mutual relationships between applied voltage, migration time and peak area in capillary zone electrophoresis. *Anal. Chim. Acta*, 342 (1997) 59-66.
- 1861 Zhukov, M.Yu., Ermakov, S.V. and Righetti, P.G.: Simplified mathematical model of irreversible sample adsorption in capillary zone electrophoresis. *J. Chromatogr. A*, 766 (1997) 171-185.
- 1862 Zou, H., Wang, H., Li, R. and Zhang, Y.: Separation mechanism of micellar-electrokinetic capillary chromatography studied by quantitative-structure retention relationship. *Prog. Nat. Sci.*, 6 (1996) 683-691; *C.A.*, 126 (1997) 112554k.
- See also 1734, 1736, 1738, 1741, 1743, 1755, 1758, 1762, 1768, 1788, 1789, 1791, 1792, 1793, 1806, 1808, 1811, 1867, 1869, 1870, 1872, 1880, 1882, 1888, 1897, 1899, 1904, 1918, 1938, 1939, 1957, 2145, 2154, 2315, 2456, 2473, 2490, 2492, 2535, 2543, 2551, 2573.
- 4f. Isotachophoresis**
- 1863 Kuruc, J., Batista, R., Cech, R. and Rajec, P.: Determination of radiation yields of ionogenic products of two-phase water-dibutyl phosphate systems by capillary isotachophoresis. *J. Radioanal. Nuc. Chem.*, 208 (1996) 369-391; *C.A.*, 126 (1997) 51999k.
- 1864 Slais, K.: Separation power of isotachophoresis (displacement electrophoresis) with continuous pH and conductivity gradients. *J. Chromatogr. A*, 764 (1997) 309-321.
- See also 2096.
- 4g. Enantiomers, separation**
- 1865 Ahmed, A. and Lloyd, D.K.: Effect of organic modifiers on retention and enantiomeric separations by capillary electrophoresis with human serum albumin as a chiral selector in solution. *J. Chromatogr. A*, 766 (1997) 237-244.
- 1866 Jin, H., Lin, F., Gu, J., Fu, R., Liu, Y. and Dai, R.: (Capillary electrophoretic enantiomeric separations with 2,6-di-O-carboxymethyl- β -cyclodextrin). *Fenxi Huaxue*, 24 (1996) 1387-1390; *C.A.*, 126 (1997) 162355s.
- 1867 Juvancz, Z., Markides, K.E. and Jicsinszky, L.: Perspectives of chiral capillary electrophoresis using phosphated cyclodextrins as additives. In: Szejtli, J. and Szente, L. (Editors), *Proc. Int. Symp. Cyclodextrins, 8th 1996*, Kluwer, Dordrecht, 1996, pp. 649-652; *C.A.*, 126 (1997) 287350t.
- 1868 Katayama, H., Ishihara, Y. and Asakawa, N.: Migration order reversal of enantiomers in capillary electrophoretic separation. *J. Chromatogr. A*, 764 (1997) 151-156.
- 1869 Nair, U.B., Rundlett, K.L. and Armstrong, D.W.: Determination of association constants in cyclodextrin or vancomycin-modified micellar capillary electrophoresis. *J. Liq. Chromatogr. Relat. Technol.*, 20 (1997) 203-216.
- 1870 Sharp, V.S., Risley, D.S., McCarthy, S., Huff, B.E. and Strege, M.A.: Evaluation of a new macrocyclic antibiotic as a chiral selector for use in capillary electrophoresis. *J. Liq. Chromatogr. Relat. Technol.*, 20 (1997) 887-898.
- 1871 Szemán, J., Roos, N. and Csabai, K.: Ruggedness of enantiomer separation by capillary electrophoresis and high-performance liquid chromatography with methylated cyclodextrins as chiral selectors. *J. Chromatogr. A*, 763 (1997) 139-147.
- 1872 Weseloh, G., Wolft, C. and Koenig, W.A.: New technique for the determination of interconversion processes based on capillary zone electrophoresis: studies with axially chiral biphenyls. *Chirality*, 8 (1996) 441-445; *C.A.*, 126 (1997) 74368t.
- See also 1814, 1818, 1837, 1847, 1874, 1888, 1950, 1951, 2501, 2502, 2506, 2509, 2523, 2530, 2532, 2589.
- 4h. Two dimensional electrophoresis**
- 1873 Bettens, E., Scheunders, P., van Dyck, D., Moens, L. and van Osta, P.: Computer analysis of two-dimensional electrophoresis gels: a new segmentation and modeling algorithm. *Electrophoresis (Weinheim)*, 18 (1997) 792-798.
- 1874 Fish, B.J.: Separation and quantification of geometric isomers in a leukotriene antagonist using cyclodextrins in capillary electrophoresis. Comparison to high-performance liquid chromatographic methods. *J. Chromatogr. A*, 768 (1997) 81-87.
- 1875 Lemkin, P.F.: Comparing two-dimensional electrophoretic gel images across the Internet. *Electrophoresis (Weinheim)*, 18 (1997) 461-470.
- 1876 Zeindl-Eberhart, E., Jungblut, P.R. and Rabes, H.M.: A new method to assign immunodetected spots in the complex two-dimensional electrophoresis pattern. *Electrophoresis (Weinheim)*, 18 (1997) 799-801.
- For additional information see *C.A.*:
126 (1997) 258212u.
- See also 1763, 1790, 1911, 1979, 1980, 1982, 1983, 1985, 1987, 1999, 2005, 2007, 2013, 2021, 2038, 2047, 2061, 2076, 2078, 2079, 2081, 2085, 2087, 2102, 2107, 2117, 2118, 2122, 2129, 2130, 2133, 2139, 2140, 2141, 2148, 2152, 2156, 2159, 2160, 2161, 2162, 2163, 2164, 2166, 2167, 2171, 2174, 2179, 2183, 2184, 2186, 2187, 2188, 2211, 2214, 2220, 2259, 2436, 2457.

4i. Other special techniques

- 1877 Lu, Y., Zhang, S., Wen, Z. and Ma, J.: (The weak-gravity electrophoresis and related techniques). *Yunnan Daxue Xuebao, Ziran Kexueban*, 18 (1996) 253-255; C.A., 126 (1997) 130605g - a review with 6 refs.
- 1878 Righetti, P.G. and Bossi, A.: Isoelectric focusing in immobilized pH gradients: recent analytical and preparative developments. *Anal. Biochem.*, 247 (1997) 1-10 - a review with 82 refs.

See also 2311.

5. HYDROCARBONS AND HALOGEN DERIVATIVES

5b. Cyclic hydrocarbons, fullerenes

- 1879 Miller, J.L., Khaledi, M.G. and Shea, D.: Separation of polycyclic aromatic hydrocarbons by nonaqueous capillary electrophoresis using charge-transfer complexation with planar organic cations. *Anal. Chem.*, 69 (1997) 1223-1229.

See also 1780, 1824, 1830, 1835, 1846.

6. ALCOHOLS

- 1880 Fang, X., Xie, Z., Ye, J. and Fang, Y.: (Determination of glycerol and sorbitol in tooth paste by capillary zone electrophoresis with amperometric detection). *Sepu*, 14 (1996) 467-469; C.A., 126 (1997) 108617r.

7. PHENOLS

- 1881 Bronze, M.R., Vilas Boas, L.F. and Belchior, A.P.: Analysis of old brandy and oak extracts by capillary electrophoresis. *J. Chromatogr. A*, 768 (1997) 143-152.
- 1882 Crego, A.L. and Marina, M.L.: Capillary zone electrophoresis versus micellar electrokinetic chromatography in the separation of phenols of environmental interest. *J. Liq. Chromatogr. Relat. Technol.*, 20 (1997) 1-20 - a review with 66 refs.
- 1883 Erim, F.B.: Effect of cationic polymer on the separation of phenols by capillary electrophoresis. *J. Chromatogr. A*, 768 (1997) 161-167.
- 1884 Hilmi, A., Luong, J.H.T. and Nguyen, A.-L.: Applicability of capillary electrophoresis with amperometric detection to study degradation of chlorophenols in contaminated soil. *Environ. Sci. Technol.*, 31 (1997) 1794-1800; C.A., 126 (1997) 254918f.

See also 1936, 2591.

8. SUBSTANCES CONTAINING HETEROCYCLIC OXYGEN

8a. Flavonoids

- 1885 Liang, H.-R., Sirén, H., Jyske, P., Reikkola, M.-L., Vuorela, P., Vuorela, H. and Hiltunen, R.: Characterization of flavonoids in extracts from four species of *Epimedium* by micellar electrokinetic capillary chromatography with diode-array detection. *J. Chromatogr. Sci.*, 35 (1997) 117-125.
- 1886 Markham, K.R. and McGhie, T.K.: Separation of flavones by capillary electrophoresis: the influence of pKa on electrophoretic mobility. *Phytochem. Anal.*, 7 (1996) 300-304; C.A., 126 (1997) 72222s.

8b. Aflatoxins and other mycotoxins

- 1887 Maragos, C.M., Bennett, G.A. and Richard, J.L.: Analysis of fumonisin B₁ in corn by capillary electrophoresis. *Adv. Exp. Med. Biol.*, 392(Fumonisins in Food) (1996) 105-112; C.A., 125 (1996) 78700x.

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

- 1888 Fridström, A., Nyholm, L., Netscher, T., Walther, W., Lundell, N. and Markides, K.E.: Neutral cyclodextrins as chiral agents for enantiomeric separations of chromanes in capillary electrophoresis. *Chromatographia*, 44 (1997) 313-319.
- 1889 Zhang, Z., Hu, Z. and Yang, G.: Identification and determination of aesculin and aesculetin in ash barks by capillary zone electrophoresis. *Chromatographia*, 44 (1997) 162-168.

9. OXO COMPOUNDS, ETHERS, EPOXIDES AND QUINONES

- 1890 Mainka, A. and Bächmann, K.: UV detection of derivatized carbonyl compounds in rain samples in capillary electrophoresis using sample stacking and a Z-shaped flow cell. *J. Chromatogr. A*, 767 (1997) 241-247.

See also 1845, 2557.

10. CARBOHYDRATES

10a. Mono and oligosaccharides. Structural studies

- 1891 Ball, R.W. and Packman, L.C.: Matrix-assisted laser desorption ionization time-of-flight mass spectrometry as a rapid quality control method in oligonucleotide synthesis. *Anal. Biochem.*, 246 (1997) 185-194.
- 1892 Denuzière, A., Taverna, M., Ferrier, D. and Domard, A.: Capillary electrophoresis of glycosaminoglycan-derived disaccharides: application to stability studies of glycosaminoglycan chitosan complexes. *Electrophoresis (Weinheim)*, 18 (1997) 745-750.
- 1893 Fernier, A.M. and Colon, L.A.: Capillary electrophoresis with constant potential amperometric detection using nickel microelectrode for detection of carbohydrates. *J. High Resolut. Chromatogr.*, 19 (1996) 613-616.

- 1894 Goto, M., Tanaka, K., Esaka, Y. and Uno, B.: (Development of a rapid and sensitive determination method of carbohydrates and their related compounds by capillary electrophoresis with amperometric detection at a copper microelectrode). *Bunseki Kagaku*, 46 (1997) 95-100; C.A., 126 (1997) 232880k.
- 1895 Guttmann, A.: Analysis of monosaccharide composition by capillary electrophoresis. *J. Chromatogr. A*, 763 (1997) 271-277.
- 1896 Jin, Z., Chen, R. and Colón, L.A.: Determination of glucose in submicroliter samples by CE-LIF using precolumn or on-column enzymatic reactions. *Anal. Chem.*, 69 (1997) 1326-1321.
- 1897 Lin, Q., Zhang, R. and Liu, G.: Use of benzoyl hydrazine reagent for monosaccharide determination by high performance capillary electrophoresis. *J. Liq. Chromatogr. Relat. Technol.*, 20 (1997) 1123-1137.
- 1898 Rydlund, A. and Dahlman, O.: Rapid analysis of unsaturated acidic xylooligosaccharides from Kraft pulps using capillary zone electrophoresis. *J. High Resolut. Chromatogr.*, 20 (1997) 72-76.
- 1899 Togashi, K., Okano, K. and Honda, S.: (Separation of oligosaccharides by ion-exchange electrokinetic chromatography). *Kuromatogurafi*, 17 (1996) 358-359; C.A., 126 (1997) 157721d.
- 1900 Zia, V., Rajewski, R.A., Bornancini, E.R., Luna, E.A. and Stella, V.J.: Effect of alkyl chain length and degree of substitution on the complexation of sulfoalkyl ether β -cyclodextrins with steroids. *J. Pharm. Sci.*, 86 (1997) 220-224.

For additional information see C.A.:
126 (1997) 248856t.

See also 1914.

10b. Polysaccharides, mucopolysaccharides, lipopolysaccharides

- 1901 Hayase, S., Honda, S. and Kakehi, K.: (Analysis of hyaluronic acid by high-performance capillary electrophoresis). *Kuromatogurafi*, 17 (1996) 362-363; C.A., 126 (1997) 148568g.
- 1902 Hayase, S., Oda, Y., Honda, S. and Kakehi, K.: High-performance capillary electrophoresis of hyaluronic acid: determination of its amount and molecular mass. *J. Chromatogr. A*, 768 (1997) 295-305.
- 1903 Toida, T., Yoshida, H., Toyoda, H., Koshiishi, I., Imanari, T., Hileman, R.E., Fromm, J.R. and Linhardt, R.J.: Structural differences and the presence of unsubstituted amino groups in heparan sulphates from different tissues and species. *Biochem. J.*, 322 (1997) 499-506.

See also 2481.

10c. Glycoproteins and their constituents

- 1904 Birdwell, K.R., Austell, T.L., Black, R.S., Jorgenson, J.W. and Hiskey, R.G.: Evaluation of proteolytically released carbohydrate-containing peptides of bovine prothrombin fragment 1 using electrospray ionization mass spectrometry and capillary electrophoresis. *J. Liq. Chromatogr. Relat. Technol.*, 20 (1997) 987-1004.
- 1905 Chen, Y.: Critical conditions for separating the microheterogeneous components of glycoproteins by capillary electrophoresis. *J. Chromatogr. A*, 768 (1997) 39-45.

- 1906 Klærke, D.A., Røjkjær, R., Christensen, L. and Schousboe, I.: Identification of β_2 -glycoprotein I as a membrane-associated protein in kidney: purification by calmodulin affinity chromatography. *Biochim. Biophys. Acta*, 1339 (1997) 203-216.
- 1907 Kwon, K.-S. and Yu, M.-H.: Effect of glycosylation on the stability of α_1 -antitrypsin toward urea denaturation and thermal deactivation. *Biochim. Biophys. Acta*, 1335 (1997) 265-272.
- 1908 Masada, R.I., Skop, E. and Starr, C.M.: Fluorophore-assisted carbohydrate electrophoresis (FACE) for quality control of recombinant-protein glycosylation. *Biotechnol. Appl. Biochem.*, 24 (1996) 195-205; C.A., 126 (1997) 128905m.
- 1909 Nieto, O., Hernandez, P. and Hernandez, L.: Capillary zone electrophoresis of human recombinant erythropoietin using Cs coated columns without additives in the running buffer. *Anal. Commun.*, 33 (1996) 425-427; C.A., 126 (1997) 127029s.
- 1910 Nishinaga, K., Murakami, M., Matsunaga, T., Yokota, Y., Saito, H., Dairi, T. and Oki, T.: (Electrophoretic fractionation of *Ganoderma lucidum* extract under non-denatured polyacrylamide gel). *Toyama-ken Yakujii Kenkyusho Nenpo* 1995, 23 (1996) 108-111; C.A., 126 (1997) 108739g.
- 1911 Packer, N.H., Pawlak, A., Kett, W.C., Gooley, A.A., Redmond, J.W. and Williams, K.L.: Proteome analysis of glycoforms: a review of strategies for the microcharacterisation of glycoproteins separated by two-dimensional polyacrylamide gel electrophoresis. *Electrophoresis (Weinheim)*, 18 (1997) 452-460.
- 1912 Rush, R.S., Boss, H.J., Katta, V. and Rohde, M.F.: Sample matrix effects on glycopeptide stability by high performance capillary electrophoresis. *Electrophoresis (Weinheim)*, 18 (1997) 751-756.
- 1913 Stoehr, C., Snogerup, L., Pennell, R.I. and Kjellbom, P.: An agarose gel electrophoresis method for the separation of arabinogalactan proteins. *Plant J.*, 10 (1996) 943-948; C.A., 126 (1997) 72224u.
- 1914 Yin, L., Xue, J. and Lin, B.: (Analysis of glycoprotein, oligosaccharide and glycopeptide by capillary electrophoresis). *Fenxi Huaxue*, 24 (1996) 1464-1468; C.A., 126 (1997) 44480f - a review with 20 refs.
- See also 2070.
- #### 11. ORGANIC ACIDS AND LIPIDS
- ##### 11a. Organic acids and simple esters
- 1915 Arellano, M., Andrianary, J., Dedieu, F., Couderc, F. and Puig, P.: Method development and validation for the simultaneous determination of organic and inorganic acids by capillary zone electrophoresis. *J. Chromatogr. A*, 765 (1997) 321-328.
- 1916 Buchberger, W., Klampfl, C.W., Eibenstein, F. and Buchgraber, K.: Determination of fermenting acids in silage by capillary electrophoresis. *J. Chromatogr. A*, 766 (1997) 197-203.
- 1917 Franke, D.R., Marsh, D.B. and Nuttall, K.L.: Serum methylmalonic acid by capillary zone electrophoresis using electrokinetic injection and indirect photometric detection. *J. Capillary Electrophor.*, 3 (1996) 125-129; C.A., 126 (1997) 274367d.
- 1918 Klampfl, C.W. and Buchberger, W.: Determination of low-molecular-mass organic acids by capillary zone electrophoresis. *TrAC*, 16 (1997) 221-229.

- 1919 Muijselaar, P.G., Claessens, H.A. and Cramers, C.A.: Migration behaviour of monovalent weak acids in micellar electrokinetic chromatography. Mobility model versus retention model. *J. Chromatogr. A.*, 765 (1997) 295-306.
- 1920 Neubert, R., Raith, K. and Schiewe, J.: Capillary zone electrophoresis in skin fatty acid analysis. *Pharmazie*, 52 (1997) 212-215.
- 1921 Schmitz, O. and Gäb, S.: Separation of isomeric hydroperoxides of unsaturated fatty acids by capillary electrophoresis. *J. Chromatogr. A.*, 767 (1997) 249-253.

See also 1819, 1828, 1881, 2540, 2541, 2557, 2588, 2591.

11c. Lipids and their constituents

- 1922 Chang, L.W., Yu, Z.L., Xu, G.Y. and Chen, Y.: Capillary electroforetic separation of monosialogangliosides using cyclodextrin and borax as selectors. *Chin. Chem. Lett.*, 7 (1996) 1033-1034; C.A., 126 (1997) 104331v.
- 1923 Rossak, M., Schäfer, A., Xu, N., Gage, D.A. and Benning, C.: Accumulation of sulfoquinovosyl-1-O-dihydroxyacetone in a sulfolipid-deficient mutant of *Rhodobacter sphaeroides* inactivated in sqdC. *Arch. Biochem. Biophys.*, 340 (1997) 219-230.
- 1924 Valverde, C., Hozbor, D.F. and Lagares, A.: Rapid preparation of affinity-purified lipopolysaccharide samples for electrophoretic analysis. *BioTechniques*, 22 (1997) 230-236; C.A., 126 (1997) 222492w.

See also 2467.

11d. Lipoproteins and their constituents

- 1925 Ettelaie, C., Haris, P.I., James, N.J., Wilbourn, B., Adam, J.M. and Bruckdorfer, K.R.: Alterations in the structure of apolipoprotein B-100 determine the behaviour of LDL towards thromboplastin. *Biochim. Biophys. Acta*, 1345 (1997) 237-247.
- 1926 Hashimoto, Y., Tsukamoto, K., Teramoto, T., Kurokawa, K. and Watanabe, T.: Purification and characterization of low density lipoprotein containing apolipoprotein B-48 from the plasma of an apoE-deficient patient. *Clin. Chim. Acta*, 259 (1997) 109-116.
- 1927 Lindhorst, E., Young, D., Bagshaw, W., Hyland, M. and Kisilevsky, R.: Acute inflammation, acute phase serum amyloid A and cholesterol metabolism in the mouse. *Biochim. Biophys. Acta*, 1339 (1997) 143-154.
- 1928 Napoli, C., Mancini, F.P., Corso, G., Malorni, A., Crescenzi, E., Postiglione, A. and Palumbo, G.: A simple and rapid purification procedure minimizes spontaneous oxidative modifications of low density lipoprotein and lipoprotein (a). *J. Biochem. (Tokyo)*, 121 (1997) 1096-1101.
- 1929 Quinby, G.E. and Deschenes, R.J.: An amino terminal prosequence is required for efficient synthesis of *S. cerevisiae* a-factor. *Biochim. Biophys. Acta*, 1356 (1997) 23-34.
- 1930 Shige, H., Ishikawa, T., Ikekawa, K., Nishiwaki, M., Higashi, K., Nakajima, K. and Nakamura, H.: Remnant-like very-low-density lipoprotein isolated from hypertriglyceridemic patients by immunoaffinity chromatography suppressed 3-hydroxy-3-methylglutaryl coenzyme A activity of cultured human skin fibroblasts. *Clin. Chim. Acta*, 258 (1997) 145-158.

- 1931 Skerka, C., Hellwage, J., Weber, W., Tilkorn, A., Buck, F., Marti, T., Kampen, E., Beisiegel, U. and Zipfel, P.F.: The human factor H-related protein 4 (FHR-4). A novel short consensus repeat-containing protein is associated with human triglyceride-rich lipoproteins. *J. Biol. Chem.*, 272 (1997) 5627-5634.
- 1932 Wang, J., Kitagawa, K., Kitado, H., Kogishi, K., Matsushita, T., Hosokawa, M. and Higuchi, K.: Regulation of the metabolism of plasma lipoproteins by apolipoprotein A-II. *Biochim. Biophys. Acta*, 1345 (1997) 248-258.
- 1933 Westhuyzen, J., Graham, S.D., Rasiah, R.L. and Saltissi, D.: Simplified sizing of low-density lipoprotein using polyacrylamide gel electrophoresis. *Eur. J. Clin. Chem. Clin. Biochem.*, 35 (1997) 17-19.
- 1934 Zhou, L. and Dovletoglou, A.: Practical capillary electrophoresis method for the quantitation of the acetate counter-ion in a novel antifungal lipopeptide. *J. Chromatogr. A.*, 763 (1997) 279-284.

See also 2084, 2161, 2231.

12. ORGANIC PEROXIDES

See 1921.

13. STEROIDS

13a. General techniques

See 1805, 1900.

13b. Pregnane and androstane derivatives

- 1935 Baeyens, V., Varesio, E., Veuthey, J.-L. and Gurny, R.: Determination of dexamethasone in tears by capillary electrophoresis. *J. Chromatogr. B*, 692 (1997) 222-226.

13c. Estrogens

See 1835.

14. STEROID GLYCOSIDES AND SAPONINS

See 2541.

16. NITRO AND NITROSO COMPOUNDS

- 1936 Kaniansky, D., Masar, M., Marak, J., Madajova, V. and Onuska, F.I.: Separation of nitrophenols by capillary zone electrophoresis. *J. Radioanal. Nucl. Chem.*, 208 (1996) 331-350; C.A., 126 (1997) 112538h.
- 1937 Stastna, M. and Slais, K.: Displacement electrophoresis of amphotytes in a continuous pH gradient moving in a capillary with a non-constant cross-section. *J. Chromatogr. A*, 768 (1997) 283-294.

See also 2591.

17. AMINES, AMIDES AND RELATED NITROGEN COMPOUNDS

17a. Amines and polyamines

- 1938 Johnson, B.D., B.D., Grinberg, N., Bicker, G. and Ellison, D.: The quantitation of a residual quaternary amine in bulk drug and process streams using capillary electrophoresis. *J. Liq. Chromatogr. Relat. Technol.*, 20 (1997) 257-272.
- 1939 Matchett, W.H. and Brumley, W.C.: Preconcentration of aliphatic amines from water determined by capillary electrophoresis with indirect UV detection. *J. Liq. Chromatogr. Relat. Technol.*, 20 (1997) 79-100.
- 1940 Nouadje, G., Siméon, N., Dedieu, F., Nertz, M., Puig, P. and Couderc, F.: Determination of twenty eight biogenic amines and amino acids during wine aging by micellar electrokinetic chromatography and laser-induced fluorescence detection. *J. Chromatogr. A*, 765 (1997) 337-343.
- 1941 Puignou, L., Casal, J., Santos, F.J. and Galceran, M.T.: Determination of heterocyclic aromatic amines by capillary zone electrophoresis in a meat extract. *J. Chromatogr. A*, 769 (1997) 293-299.

See also 1943.

17b. Catecholamines and their metabolites

- 1942 Robert, F., Bert, L., Lambas-Senás, L., Denoroy, L. and Renaud, B.: *In vivo* monitoring of extracellular noradrenaline and glutamate from rat brain cortex with 2-min microdialysis sampling using capillary electrophoresis with laser-induced fluorescence detection. *J. Neurosci. Methods*, 70 (1996) 153-162; C.A., 126 (1997) 139971f.

See also 1826.

17d. Other amine derivatives and amides (excl. peptides)

See 1946.

18. AMINO ACIDS AND PEPTIDES; CHEMICAL STRUCTURE OF PROTEINS

18a. Amino acids and their derivatives

- 1943 Bobbitt, D.R. and Jackson, W.A.: Method and apparatus for detection of underderivatized amines and amino acids utilizing end column addition of Ru(bpy)₃²⁺. U.S. US 5,614,073 (Cl. 204-452; GO1N27/26), 25 Mar. 1997, Appl. 403,464, 13 Mar. 1995; 15 pp.; C.A., 126 (1997) 232886s.
- 1944 Chen, Y., Han, F. and Yuan, Z.: (Study on the influence of β-cyclodextrin on the separation of positional isomers of amino-benzoic acid by capillary zone electrophoresis). *Fenxi Shiyanshi*, 15 (1996) 55-57; C.A., 126 (1997) 180593x.
- 1945 Chu, Q., Evans, B.T. and Zeece, M.G.: Quantitative separation of 4-hydroxyproline from skeletal muscle collagen by micellar electrokinetic capillary electrophoresis. *J. Chromatogr. B*, 692 (1997) 293-301.
- 1946 Earnest, C.P., Almada, A.L. and Mitchell, T.L.: High-performance capillary electrophoresis-pure creatine monohydrate reduces blood lipids in men and women. *Clin. Sci.*, 91 (1996) 113-118; C.A., 125 (1996) 132411u.
- 1947 Jin, W. and Wang, Y.: Determination of cysteine by capillary zone electrophoresis with end-column amperometric detection at a gold/mercury amalgam microelectrode without deoxygenation. *J. Chromatogr. A*, 769 (1997) 307-314.
- 1948 Kitaoka, Y., Kobayashi, M., Kirihata, M., Ichimoto, I. and Yoshino, K.: (Study of the interaction between boron-containing aromatic amino acid and organic carboxylic acid for the neutron capture therapy using three-spot method). *Kyoto Daigaku Genshō Jikkenshō Gakujutsu Koenkai Hobunshu*, 31 (1997) 319-324; C.A., 126 (1997) 271829v.
- 1949 Skocir, E., Prosek, M. and Oskomík, M.: Separation of di-dansyl amino acids by MEKC with a co-surfactant. *Chromatographia*, 44 (1997) 267-273.
- 1950 Sundin, N.G., Dowling, T.M., Grinberg, N. and Bicker, G.: Enantiomeric separation of dansyl amino acids using MECC with a ligand exchange mechanism. *J. Microcolumn Sep.*, 8 (1996) 323-329; C.A., 125 (1996) 276483s.
- 1951 Wren, S.A.C.: Mobility measurements on dansylated amino acids. *J. Chromatogr. A*, 768 (1997) 153-159.

See also 1760, 1835, 1869, 1940, 1942, 1965, 2540.

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

- 1952 Bergman, A.-C. and Bergman, T.: Micropreparation of peptides by capillary electrophoresis for matrix assisted laser desorption mass spectrometry. *FEBS Lett.*, 397 (1996) 45-49; C.A., 126 (1997) 154741z.
- 1953 Boss, H.J., Rohde, M.F. and Rush, R.S.: Multiple peptide fraction collection by capillary electrophoresis with reinjection analysis. *Pept. Res.*, 9 (1996) 203-209; C.A., 126 (1997) 44554h.
- 1954 Grimm, R., Zanaboni, G., Viglio, S., Dyne, K., Valli, M., Cetta, G. and Iadarola, P.: Complete resolution of imidodipeptide mixtures in urine of prolidase-deficient patients using micellar electrokinetic chromatography. *J. Chromatogr. A*, 768 (1997) 57-66.
- 1955 Jiang, G., Nepomuceno, L., Yang, Q. and Sladek, F.M.: Serine/threonine phosphorylation of orphan receptor hepatocyte nuclear factor 4. *Arch. Biochem. Biophys.*, 340 (1997) 1-9.
- 1956 Jin, W. and Wang, Y.: Capillary zone electrophoresis with end-column amperometric detection for the determination of glutathione at a gold/mercury amalgam microelectrode without deoxygenation. *Anal. Chim. Acta*, 343 (1997) 231-239.
- 1957 John, W., Raynor, M.W. and Rae, B.: Micellar electrokinetic capillary chromatography of algal toxins. *J. High Resolut. Chromatogr.*, 20 (1997) 34-38.
- 1958 Kumar, R., von Geldern, T.W., Calle, R.A. and Pandey, K.N.: Stimulation of atrial natriuretic peptide receptor/guanylyl cyclase-A signaling pathway antagonizes the activation of protein kinase C-α in murine Leydig cells. *Biochim. Biophys. Acta*, 1356 (1997) 221-228.

- 1959 Meerovitch, K., Wing, S. and Goltzman, D.: Preproparathyroid hormone-related protein, a secreted peptide, is a substrate for the ubiquitin proteolytic system. *J. Biol. Chem.*, 272 (1997) 67-6713.
- 1960 Mori, H., Araki, M., Hikita, C., Tagaya, M. and Mizushima, S.: The hydrophobic region of signal peptides is involved in the interaction with membrane-bound SecA. *Biochim. Biophys. Acta*, 1326 (1997) 23-36.
- 1961 Otto, A.: Microseparation of *in situ* digested peptides. In: Kamp, R.M., Choli-Papadopoulou, T. and Wittmann-Liebold, B. (Editors), *Protein Struct. Anal.*, Springer, Berlin, 1997, pp. 85-95; C.A., 126 (1997) 248532j.
- 1962 Paley, E.L.: A mammalian tryptophanyl-tRNA synthetase is associated with protein activity. *Eur. J. Biochem.*, 244 (1997) 780-788.
- 1963 Park, S.S., Hung, W.-L., Schaufelberger, D.E., Guzman, N.A. and Advis, J.P.: Determination of neuropeptides by capillary electrophoresis. *Methods Mol. Biol. (Totowa)*, 73 (1997) 101-111; C.A., 126 (1997) 42725r.
- 1964 Petersson, M., Walhagen, K., Nilsson, A., Wahlund, K.-G. and Nilsson, S.: Separation of a bioactive cyclic peptide and its oligomeric forms by micellar electrokinetic chromatography. *J. Chromatogr. A*, 769 (1997) 301-306.
- 1965 Richardson, A., Shannon, J.D., Adams, R.B., Schaller, M.D. and Parsons, J.T.: Identification of integrin-stimulated sites of serine phosphorylation in FRNK, the separately expressed C-terminal domain of focal adhesion kinase: a potential role for protein kinase A. *Biochem. J.*, 324 (1997) 141-149.
- 1966 Woo, S.K., Baek, S.H., Lee, J.I., Yoo, Y.J., Cho, C.M., Kang, M.-S. and Chung, C.H.: Purification and characterization of a new ubiquitin C-terminal hydrolase (UCH-1) with isopeptidase activity from chick skeletal muscle. *J. Biochem. (Tokyo)*, 121 (1997) 684-689.
- See also 1753, 1769, 1798, 1811, 1929, 2004, 2165.
- 18c. Elucidation of structure of proteins and enzymes**
- 1967 Buki, K.G., Bauer, P.I. and Kun, E.: Isolation and identification of a proteinase from calf thymus that cleaves poly(ADP-ribose) polymerase and histone H1. *Biochim. Biophys. Acta*, 1338 (1997) 100-106.
- 1968 Clottes, E., Leydier, C., Couthon, F., Marcillat, O. and Vial, C.: Denaturation by guanidinium chloride of dimeric MM-creatine kinase and its proteinase K-nicked form: evidence for a multiple-step process. *Biochim. Biophys. Acta*, 1338 (1997) 37-46.
- 1969 Gentile, F., Ferranti, P., Mamone, G., Malorni, A. and Salvatore, G.: Identification of hormonogenic tyrosines in fragments 1218-1591 of bovine thyroglobulin by mass spectrometry. Hormonogenic acceptor Tyr-1291 and donor Tyr-1375. *J. Biol. Chem.*, 272 (1997) 639-646.
- 1970 Gotoh, O.: Significant improvement in accuracy of multiple protein sequence alignments by iterative refinement as assessed by reference to structural alignments. *J. Mol. Biol.*, 264 (1996a) 823-838; C.A., 126 (1997) 128946a.
- 1971 Khawar, S.L., Watson, K. and Jones, G.L.: Peptide mapping of S-carboxymethylated hair and feather protein using two-dimensional electrophoresis. *Int. J. Biochem. Cell Biol.*, 28 (1996) 1155-1162; C.A., 126 (1997) 154689p.
- 1972 Lampi, K.J., Ma, Z., Shih, M., Shearer, T.R., Smith, J.B., Smith, D.L. and David, L.L.: Sequence analysis of β A3, β B3, and β A4 crystallins completes the identification of the major proteins in young human lens. *J. Biol. Chem.*, 272 (1997) 2268-2275.
- 1973 Mortensen, B. and Huseby, N.-E.: Clearance of circulating γ -glutamyltransferase by the asialoglycoprotein receptor. Enzyme forms with different sialic acid content are eliminated at different clearance rates and without apparent desialylation. *Clin. Chim. Acta*, 258 (1997) 47-58.
- 1974 Oster, T., Visvikis, A., Schiele, F., Wellman-Rousseau, M. and Siest, G.: Gene transfer technologies for the production of enzyme and protein reference materials. *Clin. Chim. Acta*, 257 (1997) 3-23.
- 1975 Shimizu, Y., Kusunose, E., Kikuta, Y., Arakawa, T., Ichihara, K. and Kusunose, M.: Purification and characterization of two new cytochrome P-450 related to CYP2C subfamily from rabbit small intestine microsomes. *Biochim. Biophys. Acta*, 1339 (1997) 268-276.
- 1976 Wiltfang, J., Smirnov, A., Schnierstein, B., Kelemen, G., Matthes, U., Klafki, H.-W., Staufenbiel, M., Hüther, G., Rüther, E. and Kornhuber, J.: Improved electrophoretic separation and immunoblotting of beta-amyloid (A β) peptides 1-40, 1-42, and 1-43. *Electrophoresis (Weinheim)*, 18 (1997) 527-532.
- 1977 Wittmann-Liebold, B. and Jungblut, P.: Two dimensional electrophoresis and automated microsequencing: introduction and overview. In: Zaidi, Z.H. and Smith, D.L. (Editors), *Protein Struct.-Funct. Relat.*, 4th 1995, Plenum, New York, 1996, pp. 259-265; C.A., 126 (1997) 16344w - a review with 28 refs.

See also 1798, 1875, 1904, 1966, 2050, 2068, 2100, 2120, 2211, 2221, 2243, 2259, 2296, 2320.

19. PROTEINS

19a. General techniques

- 1978 Bäliya, B.S., Rudolph, K., Langerfeld, E. and Niepold, F.: (A simple method for extraction of electrophoresed proteins from SDS-polyacrylamide gels and its use for the production of monospecific polyclonal antiserum against the soft rot erwinias). *Zuechtungsforschung*, 1 (1995) 207-210; C.A., 126 (1997) 16477s.
- 1979 Berna, N., Berna, P. and Oscarsson, S.: Polyol-promoted adsorption of serum proteins to amphiphilic agarose-based adsorbents. *J. Chromatogr. A*, 764 (1997) 193-200.
- 1980 Corthals, G.L., Molloy, M.P., Herbert, B.R., Williams, K.L. and Gooley, A.A.: Prefractionation of protein samples prior to two-dimensional electrophoresis. *Electrophoresis (Weinheim)*, 18 (1997) 317-323.
- 1981 Dainese, P., Staudenmann, W., Quadrini, M., Korostensky, C., Gonnet, G., Kertesz, M. and James, P.: Probing protein function using a combination of gene knockout and proteome analysis by mass spectrometry. *Electrophoresis (Weinheim)*, 18 (1997) 432-442.
- 1982 Dunn, M.J.: Quantitative two-dimensional gel electrophoresis: from proteins to proteomes. *Biochem. Soc. Trans.*, 25 (1997) 248-254; C.A., 126 (1997) 274253p.

- 1983 Ericsson, C., Pethö, Z. and Mehlin, H.: An on-line two-dimensional polyacrylamide gel electrophoresis protein database of adult *Drosophila melanogaster*. *Electrophoresis (Weinheim)*, 18 (1997) 484-490.
- 1984 Fan, Z.H., Jensen, P.K., Lee, C.S. and King, J.: Monitoring the refolding pathway for a large multimeric protein using capillary zone electrophoresis. *J. Chromatogr. A*, 769 (1997) 315-323.
- 1985 Figeys, D., Ducret, A. and Aebersold, R.: Identification of proteins by capillary electrophoresis-tandem mass spectrometry. Evaluation of an on-line solid-phase extraction device. *J. Chromatogr. A*, 763 (1997) 295-306.
- 1986 Figeys, D., Ducret, A., Yates, J.R., III and Aebersold, R.: Protein identification by solid phase microextraction-capillary zone electrophoresis-microelectrospray-tandem mass spectrometry. *Nat. Biotechnol.*, 14 (1996) 1579-1583; C.A., 126 (1997) 44592u.
- 1987 Galat, A. and Rioux, V.: Convergence of amino acid compositions of certain groups of proteins aids in their identification on two-dimensional electrophoresis gels. *Electrophoresis (Weinheim)*, 18 (1997) 443-451.
- 1988 Gillespie, P.G. and Gillespie, S.K.H.: Improved electrophoresis and transfer of picogram amounts of protein with hemoglobin. *Anal. Biochem.*, 246 (1997) 239-245.
- 1989 Goerke, A. and Fanara, P.: Non-discriminating native gel electrophoresis for heterogeneous protein samples. *Biochem. Soc. Trans.*, 25 (1997) 34S; C.A., 126 (1997) 274359c.
- 1990 Gong, B.Y. and Ho, J.W.: Effect of zwitterionic surfactants on the separation of proteins by capillary electrophoresis. *Electrophoresis (Weinheim)*, 18 (1997) 732-735.
- 1991 Horscroft, N.J. and Roy, P.: Thermal denaturation of proteins for SDS-PAGE analysis by microwave irradiation. *BioTechniques*, 22 (1997) 224-226; C.A., 126 (1997) 22255u.
- 1992 Houen, G., Bruun, L. and Barkholt, V.: Combined immunostaining and Coomassie Brilliant Blue staining of polyvinylidene difluoride membranes without organic solvent. *Electrophoresis (Weinheim)*, 18 (1997) 701-705.
- 1993 Kats, M., Richberg, P.C. and Hughes, D.E.: Conformational transformations of the fusion protein BR96 sFv-PE40 as monitored by micellar electrokinetic capillary chromatography and circular dichroism. *J. Chromatogr. A*, 766 (1997) 205-213.
- 1994 Koo, J.-Y. and Boschetti, E.: Online detection of a desired solute in an effluent stream using fluorescence spectroscopy. *PCT Int. Appl. WO 96 40,398* (Cl. B01D15/08), 19 Dec. 1996, US Appl. 659,199, 4 Jun. 1996; 47 pp.; C.A., 126 (1997) 141758k.
- 1995 Kurian, E., Prendergast, F.G., Tomlinson, A.J., Holmes, M.W. and Naylor, S.: Identifying sites of protein modification by using matrix-assisted laser desorption/ionization-time-of-flight mass spectrometry and online membrane preconcentration-capillary electrophoresis-tandem mass spectrometry. *J. Am. Soc. Mass Spectrom.*, 8 (1997) 8-14; C.A., 126 (1997) 141702n.
- 1996 Lee, H.G. and Desiderio, D.M.: Optimization of the capillary zone electrophoresis loading limit and resolution of proteins, using triethylamine, ammonium formate and acidic pH. *J. Chromatogr. B*, 691 (1997) 67-75.
- 1997 Liang, F.T., Granstrom, D.E. and Shi, Y.F.: Concentrating protein samples for sodium dodecyl sulphate-polyacrylamide gel electrophoresis and isoelectric focusing using protein-blotting membranes. *J. Chromatogr. A*, 764 (1997) 143-150.
- 1998 Liu, K.H. and Baumbach, G.A.: Characterization of proteins produced by porcine embryonic and amniotic tissues using two-dimensional electrophoresis. *Zhonghua Mingguo Shouyi Xuehui Zazhi*, 22 (1996) 153-162; C.A., 126 (1997) 44552f.
- 1999 Lopez, M.F. and Patton, W.F.: Reproducibility of polypeptide spot positions in two-dimensional gels run using carrier ampholytes in the isoelectric focusing dimension. *Electrophoresis (Weinheim)*, 18 (1997) 338-343.
- 2000 Minden, J. and Waggoner, A.: Difference gel electrophoresis using matched multiple dyes. *PCT Int. Appl. WO 96 33,406* (Cl. G01N27/447), 24 Oct. 1996, US Appl. 425,480, 20 Apr. 1995; 37 p.; C.A., 126 (1997) 16491s.
- 2001 Morand, M., Blaas, D. and Kenndler, E.: Reduction of wall adsorption in capillary zone electrophoresis of a basic single-chain antibody fragment by a cationic polymeric buffer additive. *J. Chromatogr. B*, 691 (1997) 192-196.
- 2002 Odom, O.W., Kudlicki, W., Kramer, G. and Hardesty, B.: An effect of polyethylene glycol 8000 on protein mobility in sodium dodecyl sulfate-polyacrylamide gel electrophoresis and a method for eliminating this effect. *Anal. Biochem.*, 245 (1997) 249-252.
- 2003 Patterson, S.D.: Identification of low-to-subpicomolar quantities of electrophoretically separated proteins: towards protein chemistry in the post-genome era. *Biochem. Soc. Trans.*, 25 (1997) 255-262; C.A., 126 (1997) 274438c.
- 2004 Pesek, J.J., Matyska, M.T. and Mauskar, L.: Separation of proteins and peptides by capillary electrochromatography in diol- and octadecyl-modified etched capillaries. *J. Chromatogr. A*, 763 (1997) 307-314.
- 2005 Rabilloud, T., Adessi, C., Giraudel, A. and Lunardi, J.: Improvement of the solubilization of proteins in two-dimensional electrophoresis with immobilized pH gradients. *Electrophoresis (Weinheim)*, 18 (1997) 307-316.
- 2006 Righetti, P.G., Conti, M. and Gelfi, C.: Study of haptoglobin-hemoglobin complexes by titration curves, capillary electrophoresis and capillary isoelectric focusing. *J. Chromatogr. A*, 767 (1997) 255-262.
- 2007 Shimazaki, Y. and Manabe, T.: Comparative analytical study of vertebrates body fluid proteins by using two-dimensional electrophoresis. *Kuromatogurafi*, 17 (1996) 346-347; C.A., 126 (1997) 154699s.
- 2008 Stoyanov, A.V. and Righetti, P.G.: pH Changes in Immobiline gels due to low-molecular mass ion adsorption and conditions for salt front formation during electrophoretic desorption. *Electrophoresis (Weinheim)*, 18 (1997) 344-348.
- 2009 Tang, Q., Harrata, A.K. and Lee, C.S.: Comparison of protein separations in capillary zone electrophoresis and capillary isoelectric focusing interfacing with electrospray mass spectrometry. *J. Mass Spectrom.*, 31 (1996) 1284-1290; C.A., 126 (1997) 72205p.
- 2010 Tulp, A., Verwoerd, D. and Hart, A.A.M.: Density gradient isoelectric focusing of proteins in artificial pH gradients made up of binary mixtures of amphoteric buffers. *Electrophoresis (Weinheim)*, 18 (1997) 767-773.
- 2011 Veraart, J.R., Schouten, Y., Gooijer, C. and Lingeman, H.: Evaluation of phytic acid as a buffer additive for the separation of proteins in capillary electrophoresis. *J. Chromatogr. A*, 768 (1997) 307-313.

- 2012 Wehr, T., Rodriguez-Diaz, R. and Liu, C.-M.: Capillary electrophoresis of proteins. *Adv. Chromatogr. (N.Y.)*, 37 (1997) 237-361; C.A., 126 (1997) 222384n - a review with 271 refs.
- 2013 Yan, J.X., Packer, N.H., Tonella, L., Ou, K., Wilkins, M.R., Sanchez, J.-C., Gooley, A.A., Hochstrasser, D.F. and Williams, K.L.: High sample throughput phosphoamino acid analysis of proteins separated by one- and two-dimensional gel electrophoresis. *J. Chromatogr. A*, 764 (1997) 201-210.

See also 1740, 1763, 1769, 1774, 1778, 1792, 1799, 1800, 1802, 1804, 1807, 1823, 1837, 1839, 1851, 1856, 1875.

19b. Proteins of cells, viruses and subcellular particles

- 2014 Alvarez-Martinez, M.-T., Porte, F., Liautard, J.P. and Widada, J.S.: Effects of profilin-annexin I association on some properties of both profilin and annexin I: modification of the inhibitory activity of profilin on actin polymerization and inhibition of the self-association of annexin I and its interactions with liposomes. *Biochim. Biophys. Acta*, 1339 (1997) 331-340.
- 2015 Bassal, S., Liu, Y.S., Thomas, R.J.S. and Phillips, W.A.: Phosphotyrosine phosphatase activity in the macrophage is enhanced by lipopolysaccharide, tumor necrosis factor α , and granulocyte/macrophage-colony stimulating factor: correlation with priming of the respiratory burst. *Biochim. Biophys. Acta*, 1355 (1997) 343-352.
- 2016 Beneduce, F., Ciervo, A. and Morace, G.: Site-directed mutagenesis of hepatitis A virus protein 3A: effects on membrane interaction. *Biochim. Biophys. Acta*, 1326 (1997) 157-165.
- 2017 Birkett, A.J., Yélamos, B., Rodríguez-Crespo, I., Gavilanes, F. and Peterson, D.L.: Cloning, expression, purification, and characterization of the major core protein (p26) from equine infectious anemia virus. *Biochim. Biophys. Acta*, 1339 (1997) 62-72.
- 2018 Bunik, V., Shoubnikova, A., Bisswanger, H. and Follmann, H.: Characterization of thioredoxins by sodium dodecyl sulfate-slab gel electrophoresis and high performance capillary electrophoresis. *Electrophoresis (Weinheim)*, 18 (1997) 762-766.
- 2019 Degouys, V., Gatot, C., Sonderhoff, S., Trampler, F. and Miller, A.O.A.: 2D PAGE examination of the proteins extracted from high density perfused HeLa cell cultures controlled by an online capacitance-based biomass probe. In: Carrondo, M.J.T., Griffiths, B. and Moreira, J.L.P. (Editors), *Anim. Cell Technol.: Vaccines Genet. Med., [Proc. Meet. ESACT], 14th 1996*, Kluwer, Dordrecht, 1997, pp. 243-249; C.A., 126 (1997) 274366c.
- 2020 Gilsdorf, J.S., Rebbeor, J.F. and Holohan, P.D.: Evidence that the organic cation/H⁺ exchanger in the brush border membrane of dog kidney is a 41-kDa protein. *J. Pharmacol. Exp. Ther.*, 280 (1997) 1043-1050.
- 2021 Görg, A., Obermaier, C., Boguth, G., Csordas, A., Diaz, J.-J. and Madjar, J.-J.: Very alkaline immobilized pH gradients for two-dimensional electrophoresis of ribosomal and nuclear proteins. *Electrophoresis (Weinheim)*, 18 (1997) 328-337.
- 2022 Hasham, M.I., Pelech, S.L., Koide, H.B. and Krieger, C.: Activation of protein kinase C by intracellular free calcium in the motoneuron cell line NSC-19. *Biochim. Biophys. Acta*, 1360 (1997) 177-191.
- 2023 Hulkower, K.I., Otis, E.R., Li, J., Ennis, B.W., Cugier, D.J., Bell, R.L., Carter, G.W. and Glaser, K.B.: Induction of prostaglandin H synthase-2 and tumor necrosis factor- α in human amniotic WIHS cells by various stimuli occurs through distinct intracellular mechanisms. *J. Pharmacol. Exp. Ther.*, 280 (1997) 1065-1074.
- 2024 Jiang, L.L., Kurosawa, T., Sato, M., Suzuki, Y. and Hashimoto, T.: Physiological role of D-3-hydroxyacyl-CoA dehydratase/D-3-hydroxyacyl-CoA dehydrogenase bifunctional protein. *J. Biochem. (Tokyo)*, 121 (1997) 506-513.
- 2025 Kawahire, S., Takeuchi, M., Gohshi, T., Sasagawa, S., Shimada, M., Takahashi, M., Abe, T.K., Ueda, T., Kuwano, R., Hikawa, A., Ichimura, T., Omata, S. and Horigome, T.: cDNA Cloning of nuclear localization signal binding protein NBP60, a rat homologue of lamin B receptor, and identification of binding sites of human lamin B receptor for nuclear localization signals and chromatin. *J. Biochem. (Tokyo)*, 121 (1997) 881-889.
- 2026 Kitakawa, M., Graack, H.-R., Grohmann, L., Goldschmidt-Reisen, S., Herfurth, E., Wittmann-Liebold, B., Nishimura, T. and Isono, K.: Identification and characterization of the genes for mitochondrial ribosomal proteins of *Saccharomyces cerevisiae*. *Eur. J. Biochem.*, 24 (1997) 449-456.
- 2027 Lindros, K.O., Oinonen, T., Johansson, I. and Ingelman-Sundberg, M.: Selective centrilobular expression of the aryl hydrocarbon receptor in rat liver. *J. Pharmacol. Exp. Ther.*, 280 (1997) 506-511.
- 2028 Marshansky, V., Bourgoin, S., Londoño, I., Bendayan, M. and Vinay, P.: Identification of ADP-ribosylation factor-6 in brush-border membrane and early endosomes of human kidney proximal tubules. *Electrophoresis (Weinheim)*, 18 (1997) 538-547.
- 2029 Meiklejohn, B.I., Rahman, N.A., Roess, D.A. and Barisas, B.G.: 5-Iodonaphthyl-1-azide labeling of plasma membrane proteins adjacent to specific sites via energy transfer. *Biochim. Biophys. Acta*, 1324 (1997) 320-332.
- 2030 Mikalsen, S.-O. and Kaalhus, O.: A characterization of permolybdate and its effect on cellular tyrosine phosphorylation, gap junctional intercellular communication and phosphorylation status of the gap junction protein, connexin 43. *Biochim. Biophys. Acta*, 1356 (1997) 207-220.
- 2031 Mouat, M.F. and Manchester, K.L.: Non-ideal size exclusion chromatography of eukaryotic protein synthesis initiation factor 2. *J. Liq. Chromatogr. Relat. Technol.*, 20 (1997) 143-153.
- 2032 Nègre-Aminou, P., van Vliet, A.K., van Erck, M., van Thiel, G.C.F., van Leeuwen, R.E.W. and Cohen, L.H.: Inhibition of proliferation of human smooth muscle cells by various HMG-CoA reductase inhibitors; comparison with other human cell types. *Biochim. Biophys. Acta*, 1345 (1997) 259-268.
- 2033 Novikov, D., Dieuaide-Noubhani, M., Vermeesch, J.R., Fournier, B., Mannaerts, G.P. and van Veldhoven, P.P.: The human peroxisomal multifunctional protein involved in bile acid synthesis: activity measurement, deficiency in Zellweger syndrome and chromosome mapping. *Biochim. Biophys. Acta*, 1360 (1997) 229-240.
- 2034 Nur-E-Kamal, M.S.A., Reverey, H., Ponimaskin, E., Schrotter-Diez, B., Herrmann, A. and Schmidt, M.F.G.: Targeted delivery of human neurofibromin and c-Raf-1 mutants to the cytoplasmic membrane by use of the influenza virus hemagglutinin. *Biochim. Biophys. Acta*, 1338 (1997) 233-243.

- 2035 Ono, Y., Kinouchi, T., Sorimachi, H., Ishiura, S. and Suzuki, K.: Deletion of an endosomal/lysosomal targeting signal promotes the secretion of Alzheimer's disease amyloid precursor protein (APP). *J. Biochem. (Tokyo)*, 121 (1997) 585-590.
- 2036 Ostedgaard, L.S., Rich, D.P., DeBerg, L.G. and Welsh, M.J.: Association of domains within the cystic fibrosis transmembrane conductance regulator. *Biochemistry*, 36 (1997) 1287-1294.
- 2037 Ozolins, T.R.S. and Hales, B.F.: Oxidative stress regulates the expression and activity of transcription factor activator protein-1 in rat conceptus. *J. Pharmacol. Exp. Ther.*, 280 (1997) 1085-1093.
- 2038 Raufman, J.-P., Malhotra, R. and Raffaniello, R.D.: Regulation of calcium-induced exocytosis from gastric chief cells by protein phosphatase-2B (calcineurin). *Biochim. Biophys. Acta*, 1357 (1997) 73-80.
- 2039 Russell, J.A., Whaley, K. and Heaphy, S.: The sequence of a cDNA encoding functional murine C1-inhibitor protein. *Biochim. Biophys. Acta*, 1352 (1997) 156-160.
- 2040 Sato, K., Nishina, Y. and Shiga, K.: In vitro assembly of FAD, AMP, and the two subunits of electron-transferring flavoprotein: an important role of AMP related with the conformational change of the apoprotein. *J. Biochem. (Tokyo)*, 121 (1997) 477-486.
- 2041 Sjölin, C., Movitz, C., Lundqvist, H. and Dahlgren, C.: Translocation of annexin XI to neutrophil subcellular organelles. *Biochim. Biophys. Acta*, 1326 (1997) 149-156.
- 2042 Smiljanic-Georgijev, N., Rigat, B., Xie, B., Wang, W. and Mahuran, D.J.: Characterization of the affinity of the Gm2 activator protein for glycolipids by a fluorescence dequenching assay. *Biochim. Biophys. Acta*, 1339 (1997) 192-202.
- 2043 Song, Q. and Gilbert, L.I.: Molecular cloning, developmental expression, and phosphorylation of ribosomal protein S6 in the endocrine gland responsible for insect molting. *J. Biol. Chem.*, 272 (1997) 4429-4435.
- 2044 Stapleton, S.R., Garlock, G.L., Foellmi-Adams, L. and Kletzien, R.F.: Selenium: potent stimulator of tyrosyl phosphorylation and activator of MAP kinase. *Biochim. Biophys. Acta*, 1355 (1997) 259-269.
- 2045 Torres-Zamorano, V., Kekuda, R., Leibach, F.H. and Ganapathy, V.: Tyrosine phosphorylation-and epidermal growth factor-dependent regulation of the sodium-coupled amino acid transporter B⁰ in the human placental choriocarcinoma cell line JAR. *Biochim. Biophys. Acta*, 1356 (1997) 258-270.
- 2046 Tsujimoto, N., Kontani, K., Inoue, S.-i., Hoshino, S.-i., Hazeki, O., Malavasi, F. and Katada, T.: Potentiation of chemotactic peptide-induced superoxide generation by CD38 ligation in human myeloid cell lines. *J. Biochem. (Tokyo)*, 121 (1997) 949-956.
- 2047 Urushidani, T. and Nagao, T.: Ca²⁺-Dependent membrane bound protein fraction from rabbit gastric mucosa contains a protein whose histidyl residue is phosphorylated. *Biochim. Biophys. Acta*, 1356 (1997) 71-83.
- 2048 Utani, A., Nomizu, M. and Yamada, Y.: Fibulin-2 binds to the short arms of laminin-5 and laminin-1 via conserved amino acid sequences. *J. Biol. Chem.*, 272 (1997) 2814-2820.
- 2049 Worlax, V.L., Bullard, J.M., Ma, L., Yokogawa, T. and Spremulli, L.L.: Mechanistic studies of the translational elongation cycle in mammalian mitochondria. *Biochim. Biophys. Acta*, 1352 (1997) 91-101.
- 2050 Xin, H., Leanza, K. and Spremulli, L.L.: Expression of bovine mitochondrial elongation factor Ts in *Escherichia coli* and characterization of the heterologous complex formed with prokaryotic elongation factor Tu. *Biochim. Biophys. Acta*, 1352 (1997) 102-112.
- 2051 Yeo, E.-J., Provost, J.J. and Exton, J.H.: Dissociation of tyrosine phosphorylation and activation of phosphoinositide phospholipase C induced by the protein kinase C inhibitor Ro-31-8220 in Swiss 3T3 cells treated with platelet-derived growth factor. *Biochim. Biophys. Acta*, 1356 (1997) 308-320.
- See also 1960, 1993, 2053, 2058, 2081, 2201, 2227, 2247, 2357.
- 19c. *Proteins synthesized by genetic manipulation, monoclonal antibodies*
- 2052 Arata, Y., Hirabayashi, J. and Kasai, K.-i.: The two lectin domains of the tandem-repeat 32-kDa galectin of the nematode *Caenorhabditis elegans* have different binding properties. Studies with recombinant protein. *J. Biochem. (Tokyo)*, 121 (1997) 1002-1009.
- 2053 Bonafonte, M.-T., Priest, J.W., Garmon, D., Arrowood, M.J. and Mead, J.R.: Isolation of the gene coding for elongation factor-1 α in *Cryptosporidium parvum*. *Biochim. Biophys. Acta*, 1351 (1997) 256-260.
- 2054 Brünker, P., Altenbuchner, J., Kulbe, K.D. and Mattes, R.: Cloning, nucleotide sequence and expression of a mannitol dehydrogenase gene from *Pseudomonas fluorescens* DSM 50106 in *Escherichia coli*. *Biochim. Biophys. Acta*, 1351 (1997) 157-167.
- 2055 Chang, C.-Y., Fritzsche, H.A., Glassman, A.B., McClure, K.C. and Liu, F.J.: Underestimation of monoclonal proteins by agarose serum protein electrophoresis. *Ann. Clin. Lab. Sci.*, 27 (1997) 123-129; C.A., 126 (1997) 273321x.
- 2056 Hashimoto, C., Masuda, H., Ayaki, M., Suzuki, Y., Uenaka, A., Seya, T., Miyoshi, J., Takahashi, K. and Inui, Y.: Molecular cloning and sequence analysis of the cDNA for the mouse counterpart to adult hamster liver purified growth inhibitory factor. *Biochim. Biophys. Acta*, 1355 (1997) 205-208.
- 2057 Luo, D., Geng, M., Noujaim, A.A. and Madiyalakan, R.: An engineered bivalent single-chain antibody fragment that increases antigen binding activity. *J. Biochem. (Tokyo)*, 121 (1997) 831-834.
- 2058 Yao, Q., Bevan, J.L., Weaver, R.F. and Bigelow, D.J.: Purification of porcine phospholamban expressed in *E. coli*. *Protein Expression Purif.*, 8 (1996) 463-468; C.A., 126 (1997) 16410q.
- 2059 Zhou, A., Jiang, X., Dou, F., Zhu, D. and Xu, X.: Renaturation, purification, and characterization of human plasminogen activator inhibitor type 2 (PAI-2) accumulated at high level in *Escherichia coli*. *J. Biochem. (Tokyo)*, 121 (1997) 930-934.
- See also 1974, 2034, 2070, 2094, 2100, 2134, 2150, 2222, 2227.
- 19d. *Microbial and plant proteins*
- 2060 Bietz, J.A. and Lookhart, G.L.: Wheat varietal identification by capillary electrophoresis: an inter-laboratory comparison of methods. *Food Sci. Technol. (London)*, 30 (1997) 210-213; C.A., 126 (1997) 275043g.

- 2061 Birkelund, S., Bini, L., Pallini, V., Sanchez-Campillo, M., Liberatori, S., Clausen, J.D., Østergaard, S., Holm, A. and Christiansen, G.: Characterization of *Chlamydia trachomatis* L2-induced tyrosine-phosphorylated HeLa cell proteins by two-dimensional gel electrophoresis. *Electrophoresis (Weinheim)*, 18 (1997) 563-567.
- 2062 Caugant, D.A., Ashton, F.E., Bibb, W.F., Boerlin, P., Donachie, W., Low, C., Gilmour, A., Harbey, J. and Noerrung, B.: Multicous enzyme electrophoresis for characterization of *Listeria monocytogenes* isolates: Result of an international comparative study. *Int. J. Food Microbiol.*, 32 (1996) 301-311; C.A., 126 (1997) 44560g.
- 2063 Enami, I., Tohri, A., Kamo, M., Ohta, H. and Shen, J.-R.: Identification of domains on the 43 kDa chlorophyll-carrying protein (CP43) that are shielded from tryptic attack by binding of the extrinsic 33 kDa protein with Photosystem II complex. *Biochim. Biophys. Acta*, 1320 (1997) 17-26.
- 2064 Gallie, D.R., Le, H., Caldwell, C., Tanguay, R.L., Hoang, N.X. and Browning, K.S.: The phosphorylation state of translation initiation factors is regulated developmentally and following heat shock in wheat. *J. Biol. Chem.*, 272 (1997) 1046-1053.
- 2065 Gaskin, D.K., Bohach, G.A., Schlievert, P.M. and Hovde, C.: Purification of *Staphylococcus aureus* β -toxin: Comparison of three isoelectric focusing methods. *Protein Expression Purif.*, 9 (1997) 76-82; C.A., 126 (1997) 128097z.
- 2066 Heinze, I., Pfündel, E., Hühn, M. and Dau, H.: Assembly of light harvesting complexes II (LHC-II) in the absence of lutein. A study on the α -carotenoid-free mutant C-2A'-34 of the green alga *Scenedesmus obliquus*. *Biochim. Biophys. Acta*, 1320 (1997) 188-194.
- 2067 Hostacka, A. and Karellova, E.: Postantibiotic effect of norfloxacin and its influence on profiles in outer membrane proteins of *Pseudomonas aeruginosa*. *Pharmazie*, 52 (1997) 238-239.
- 2068 Jensen, B., Unger, K.K., Ueba, J., Gey, M., Kim, Y.-M. and Flecker, P.: Proteolytic cleavage of soybean Bowman-Birk inhibitor monitored by means of high-performance capillary electrophoresis. Implications for the mechanism of proteinase inhibitors. *J. Biochem. Biophys. Methods*, 33 (1996) 171-185; C.A., 126 (1997) 154252r.
- 2069 Kouzuma, Y., Yamasaki, N. and Kimura, M.: The tissue-type plasminogen activator inhibitor ETIa from *Erythrina variegata*: structural basis for the inhibitory activity by cloning, expression, and mutagenesis of the cDNA encoding ETIa. *J. Biochem. (Tokyo)*, 121 (1997) 456-463.
- 2070 Kumar, H.P.M., Hague, C., Haley, T., Starr, C.M., Besman, M.J., Lundblad, R.L. and Baker, D.: Elucidation of N-linked oligosaccharide structures of recombinant human factor VIII using fluorophore-assisted carbohydrate electrophoresis. *Biotechnol. Appl. Biochem.*, 24 (1996) 207-216; C.A., 126 (1997) 168670n.
- 2071 Larsson, T., Norbeck, J., Karlsson, H., Karlsson, K.-A. and Blomberg, A.: Identification of two-dimensional gel electrophoresis resolved yeast proteins by matrix-assisted laser desorption ionization mass spectrometry. *Electrophoresis (Weinheim)*, 18 (1997) 418-423.
- 2072 Marquardt, J. and Rhiel, E.: The membrane-intrinsic light-harvesting complex of the red alga *Galdiera sulphuraria* (formerly *Cyanidium caldarium*): biochemical and immunochemical characterization. *Biochim. Biophys. Acta*, 1320 (1997) 153-164.
- 2073 Miura, T., Shen, J., Takahashi, S., Kamo, M., Nakamura, E., Ohta, H., Kamei, A., Inoue, Y., Domae, N., Takio, K., Nakazato, K., Inoue, Y. and Enami, I.: Identification of domains on the extrinsic 33-kDa protein possibly involved in electrostatic interaction with photosystem II complex by means of chemical modification. *J. Biol. Chem.*, 272 (1997) 3788-3798.
- 2074 Moll, R., Schmidtke, S., Petersen, A. and Schäfer, G.: The signal recognition particle receptor α subunit of the hyperthermophilic archaeon *Acidianus ambivalens* exhibits an intrinsic GTP-hydrolyzing activity. *Biochim. Biophys. Acta*, 1335 (1997) 218-230.
- 2075 Nejidat, A., Shmuely, H. and Abeliovich, A.: Effect of ammonia starvation on hydroxylamine oxidoreductase activity of *Nitrosononas europaea*. *J. Biochem. (Tokyo)*, 121 (1997) 957-960.
- 2076 Ong, K.L. and Chang, F.N.: Analysis of proteins from different phase variants of the entomopathogenic bacteria *Photorhabdus luminescens* by two-dimensional zymography. *Electrophoresis (Weinheim)*, 18 (1997) 834-839.
- 2077 Palena, C.M., Chan, R.L. and Gonzalez, D.H.: A novel type of dimerization motif, related to leucine zippers, is present in plant homeodomain proteins. *Biochim. Biophys. Acta*, 1352 (1997) 203-212.
- 2078 Peitsch, M.C., Wilkins, M.R., Tonella, L., Sanchez, J.-C., Appel, R.D. and Hochstrasser, D.F.: Large-scale protein modelling and integration with the SWISS-PROT and SWISS-2DPAGE databases: the example of *Escherichia coli*. *Electrophoresis (Weinheim)*, 18 (1997) 498-501.
- 2079 Petersen, A., Grobe, K., Lindner, B., Schlaak, M. and Becker, W.-M.: Comparison of natural and recombinant isoforms of grass pollen allergens. *Electrophoresis (Weinheim)*, 18 (1997) 819-825.
- 2080 Rosenberg, M.F., Holzenburg, A., Shepherd, F.H., Nicholson, W.V., Flint, T.D. and Ford, R.C.: Rebinding of the extrinsic proteins of Photosystem II studied by electron microscopy and single particle alignment: an assessment with small two-dimensional ordered arrays of Photosystem II. *Biochim. Biophys. Acta*, 1319 (1997) 119-132.
- 2081 Rouquié, D., Peltier, J.-B., Marquis-Mansion, M., Tournaire, C., Doumas, P. and Rossignol, M.: Construction of a directory of tobacco plasma membrane proteins by combined two-dimensional gel electrophoresis and protein sequencing. *Electrophoresis (Weinheim)*, 18 (1997) 654-660.
- 2082 Seeram, S.S., Hiraga, K., Saji, A., Tashiro, M. and Oda, K.: Identification of reactive site of a proteinaceous metalloproteinase inhibitor from *Streptomyces nigrescens* TK-23. *J. Biochem. (Tokyo)*, 121 (1997) 1088-1095.
- 2083 Tang, G., Iida, T., Inoue, H., Yutsudo, M., Yamamoto, K. and Honda, T.: A mutant cell line resistant to *Vibrio parahaemolyticus* thermostable direct hemolysin (TDH): its potential in identification of putative receptor for TDH. *Biochim. Biophys. Acta*, 1360 (1997) 277-282.
- 2084 Tzen, J.T.C., Peng, C.-C., Cheng, D.-J., Chen, E.C.F. and Chiu, J.M.H.: A new method for seed oil body purification and examination of oil body integrity following germination. *J. Biochem. (Tokyo)*, 121 (1997) 762-768.
- 2085 Weiss, W., Huber, G., Engel, K.-H., Pethran, A., Dunn, M.J., Gooley, A.A. and Görg, A.: Identification and characterization of wheat grain albumin/globulin allergens. *Electrophoresis (Weinheim)*, 18 (1997) 826-833.

- 2086 Yamamori, M. and Endo, T.R.: Variation of starch granule proteins and chromosome mapping of their coding genes in common wheat. *Theor. Appl. Genet.*, 93 (1996) 275-281; C.A., 126 (1997) 100007w.
- 2087 Yan, J.X., Tonella, L., Sanchez, J.-C., Wilkins, M.R., Packer, N.H., Gooley, A.A., Hochstrasser, D.F. and Williams, K.L.: The *Dicytostelium discoideum* proteome - the SWISS-2DPAGE database of the multicellular aggregate (slug). *Electrophoresis (Weinheim)*, 18 (1997) 491-497.
- See also 1790, 2110.
- 19e. *Proteins of blood, serum and blood cells*
- 2088 Aoki, N., Matsuda, T., Sakiyama, T., Iwatsuki, K. and Furukawa, K.: Species-specific β -N-acetylgalactosaminylation of serum IgG proteins. *Biochim. Biophys. Acta*, 1334 (1997) 207-213.
- 2089 Batamuci, E.K., Kristensen, F. and Jensen, A.L.: Serum protein electrophoresis. Potential test for use in geriatric companion animal health programs. *J. Vet. Med., Ser. A*, 43 (1996) 501-508; C.A., 126 (1997) 101354u.
- 2090 Carrette, O., Mizon, C., Sautière, P., Sesboijé, R. and Mizon, J.: Purification and characterization of pig inter- α -inhibitor and its constitutive heavy chains. *Biochim. Biophys. Acta*, 1338 (1997) 21-30.
- 2091 Corsi, D., Galluzzi, L., Lecomte, M.C. and Magnani, M.: Identification of α -spectrin domains susceptible to ubiquitination. *J. Biol. Chem.*, 272 (1997) 2977-2983.
- 2092 Gianazza, E., Galliano, M. and Miller, I.: Structural transitions of human serum albumin: an investigation using electrophoretic techniques. *Electrophoresis (Weinheim)*, 18 (1997) 695-700.
- 2093 Gottschlich, N. and Kasche, V.: Purification of monoclonal antibodies by simulated moving-bed chromatography. *J. Chromatogr. A*, 765 (1997) 201-206.
- 2094 Herrala, A., Kurkela, R., Porvari, K., Isomäki, R., Hentuu, P. and Viiko, P.: Human prostate-specific glandular kallikrein is expressed as an active and an inactive protein. *Clin. Chem. (Washington)*, 43 (1997) 279-284.
- 2095 Hirose, M., Mitsuhashashi, K. and Shibakawa, T.: (Immunoassay of antigen by electrophoresis). *Jpn. Kokai Tokkyo Koho JP 09 49,839 [97 49,839] (Cl. GO1N33/536)*, 18 Feb. 1997, Appl. 95/203,422, 9 Aug. 1995; 4 pp.; C.A., 126 (1997) 248573y.
- 2096 Hogdall, C.K., Christiansen, M., Christensen, L., Yazova, A.K., Koch, C., Clemmensen, I. and Norgaard-Pedersen, B.: Monoclonal antibodies against human tetranectin, epitope characterization and use in immunohistochemistry. *Clin. Chim. Acta*, 258 (1997) 159-177.
- 2097 Jin, W., Weng, Q. and Wu, J.: Determination of bovine serum albumin by capillary zone electrophoresis with end-column amperometric detection at the carbon fiber microdisk array electrode. *Anal. Chim. Acta*, 342 (1997) 67-74.
- 2098 Kellner, R., Orth, T. and Mayet, W.-J.: Characterization of target antigens from anti-neutrophil cytoplasmic antibodies in autoimmune hepatitis type-I. *Electrophoresis (Weinheim)*, 18 (1997) 507-510.
- 2099 Kido, A., Oya, M. and Jin, Z.: Alternative method of subtyping the A subunit of coagulation factor XIII (FXIIIA). *Electrophoresis (Weinheim)*, 18 (1997) 790-791.
- 2100 Kobayashi, Y., Nagatake, H., Shimozato, O. and Watanabe, N.: Interaction of the pre-domain of interleukin-1 with the mature domain. *J. Biochem. (Tokyo)*, 121 (1997) 896-901.
- 2101 Lehmann, R., Koch, M., Voelter, W., Häring, H.U. and Liebich, H.M.: Routine serum protein analysis by capillary zone electrophoresis: clinical evaluation. *Chromatographia*, 45 (1997) 390-395.
- 2102 Liberatori, S., Bini, L., de Felice, C., Magi, B., Marzocchi, B., Raggiachia, R., Pallini, V. and Bracci, R.: Acute-phase proteins in perinatal human plasma. *Electrophoresis (Weinheim)*, 18 (1997) 520-526.
- 2103 Loskoot, M. and Fodde, R.: Denaturing gradient gel electrophoresis. In: Taylor, G.R. (Editor), *Lab. Methods Detect. Mutat. Polymorphisms DNA*, CRC, Boca Raton, 1997, pp. 95-107; C.A., 126 (1997) 248480r.
- 2104 Lu, L., Li, Z., Wang, M., Xu, Y., Qian, M. and Qian, Y.: (Preliminary study on hepatitis C virus serum with IEF electrophoresis). *Nanjing Yike Daxue Xuebao*, 16 (1996) 536-537; C.A., 126 (1997) 224003m.
- 2105 Mizon, C., Héron, A., Capon, C., Sautière, P., Michalski, C., Sesboué, R. and Mizon, J.: Human pre- α -inhibitor: isolation from a by-product of industrial scale plasma fractionation and structural analysis of its H3 heavy chain. *J. Chromatogr. B*, 692 (1997) 281-291.
- 2106 Niimi, T., Miki, K. and Kitagawa, Y.: Expression of the long arm sequence of mouse laminin $\alpha 1$, $\beta 1$, or $\gamma 1$ chain in COS1 cells and assembly of monkey-mouse hybrid laminin. *J. Biochem. (Tokyo)*, 121 (1997) 854-861.
- 2107 Qian, Y., Sensibar, J.A., Zelmer, D.J., Schaeffer, A.J., Finlay, J.A., Rittenhouse, H.G. and Lee, C.: Two-dimensional gel electrophoresis detects prostate-specific antigen- α_1 -antichymotrypsin complex in serum but not in prostatic fluid. *Clin. Chem. (Washington)*, 43 (1997) 352-359.
- 2108 Quesada, M.A.: Replaceable polymers in DNA sequencing by capillary electrophoresis. *Curr. Opin. Biotechnol.*, 8 (1997) 82-93; C.A., 126 (1997) 166873g - a review with 65 refs.
- 2109 Ralston, P.B. and Strein, T.G.: A study of deproteinization methods for subsequent serum analysis with capillary electrophoresis. *Microchem. J.*, 55 (1997) 270-283; C.A., 126 (1997) 248477v.
- 2110 Rezaei, E., Quek, L. and Watson, S.P.: A novel inhibitory action of wheat germ agglutinin on phospholipase C in HEL and MEG-01 cell lines. *Biochim. Biophys. Acta*, 1356 (1997) 101-110.
- 2111 Schroeder, W., Koesling, M., Wulff, K., Wehnert, M. and Herrmann, F.H.: Large-scale screening for factor V Leiden mutation in a north-eastern German population. *Haemostasis*, 26 (1996) 233-236; C.A., 126 (1997) 17110d.
- 2112 Sjöström, I., Gröndahl, H., Falk, G., Kronvall, G. and Ullberg, M.: Purification and characterisation of a plasminogen-binding protein from *Haemophilus influenzae*. Sequence determination reveals identity with aspartase. *Biochim. Biophys. Acta*, 1324 (1997) 182-190.
- 2113 Tu, J., Zheng, X., Zhou, X., Li, X., Chen, L., Hu, H. and Hong, J.: (A simple method for preparing human albumin and its anti-serum). *Hubei Yike Daxue Xuebao*, 17 (1996) 316-318; C.A., 126 (1997) 128925t.
- 2114 Van't Veer, C. and Mann, K.G.: Regulation of tissue factor initiated thrombin generation by the stoichiometric inhibitors tissue factor pathway inhibitor, antithrombin-III, and heparin cofactor-II. *J. Biol. Chem.*, 272 (1997) 4367-4377.

See also 1802, 1979, 2055, 2057, 2059, 2079, 2143, 2145, 2148, 2214.

19f. Structural and muscle proteins

- 2115 Bodor, G.S., Survant, L., Voss, E.M., Smith, S., Porterfield, D. and Apple, F.S.: Cardiac troponin T composition in normal and regenerating human skeletal muscle. *Clin. Chem. (Washington)*, 43 (1997) 476-484.
- 2116 DalleDonne, I., Milzani, A. and Colombo, R.: Actin assembly by cadmium ions. *Biochim. Biophys. Acta*, 1357 (1997) 5-17.
- 2117 Evans, G., Wheeler, C.H., Corbett, J.M. and Dunn, M.J.: Construction of HSC-2DPAGE: a two-dimensional gel electrophoresis database of heart proteins. *Electrophoresis (Weinheim)*, 18 (1997) 471-479.
- 2118 Gineitis, A., Petersen, E., Ängquist, K.-A. and Stigbrand, T.: Two-dimensional high-resolution electrophoresis of elastin-derived peptides. *J. Chromatogr. B*, 692 (1997) 303-310.
- 2119 Harada, O., Sumida, T., Tsunoda, K. and Sugita, M.: (Study on collagen characterization by capillary electrophoresis). *Hyogokenritsu Kogyo Gijutsu Senta Kenkyu Hokokusho*, 6 (1996) 112; C.A., 126 (1997) 279266e.
- 2120 Harada, O., Sumida, S., Sugita, M. and Yamamoto, T.: Characterization of collagen by capillary electrophoresis. *Bull. Chem. Soc. Jpn.*, 69 (1996) 3575-3579; C.A., 126 (1997) 44147c.
- 2121 Hashimoto, K., Noshiro, M., Ohno, S., Kawamoto, T., Satakeda, H., Akagawa, Y., Nakashima, K., Okimura, A., Ishida, H., Okamoto, T., Pan, H., Shen, M., Yan, W. and Kato, Y.: Characterization of a cartilage-derived 66-kDa protein (RGD-CAP/ β ig-h3) that binds to collagen. *Biochim. Biophys. Acta*, 1355 (1997) 303-314.
- 2122 Herbert, B.R., Molloy, M.P., Yan, J.X., Gooley, A.A., Bryson, W.G. and Williams, K.L.: Characterisation of wool intermediate filament proteins separated by micropreparative two-dimensional electrophoresis. *Electrophoresis (Weinheim)*, 18 (1997) 568-572.
- 2123 Hu, X.W., Knight, D.P. and Chapman, J.A.: The effect of non-polar liquids and non-ionic detergents on the ultrastructure and assembly of rat tail tendon collagen fibrils *in vitro*. *Biochim. Biophys. Acta*, 1334 (1997) 327-337.
- 2124 James, M., Man, N.t., Edwards, Y.H. and Morris, G.E.: The molecular basis for cross-reaction of an anti-dystrophin antibody with alpha-actinin. *Biochim. Biophys. Acta*, 1360 (1997) 169-176.
- 2125 Kamiguti, A.S., Moura-da-Silva, A.M., Laing, G.D., Knapp, T., Zuzel, M., Crampton, J.M. and Theakston, R.D.G.: Collagen-induced secretion-dependent phase of platelet aggregation is inhibited by the snake venom metalloproteinase jararhagin. *Biochim. Biophys. Acta*, 1335 (1997) 209-217.
- 2126 Liu, Y.K., Nemoto, A., Feng, Y. and Uemura, T.: The binding ability to matrix proteins and the inhibitory effects on cell adhesion of synthetic peptides derived from a conserved sequence of integrins. *J. Biochem. (Tokyo)*, 121 (1997) 961-968.
- 2127 Miyata, H., Kinoshita, K., Jr. and Marriott, G.: Cooperative association of actin protomers and crosslinked actin oligomers in filaments at low ionic strength. *J. Biochem. (Tokyo)*, 121 (1997) 527-533.
- 2128 Nishita, K., Ojima, T., Takahashi, A. and Inoue, A.: Troponin from smooth adductor muscle of Ezo-giant scallop. *J. Biochem. (Tokyo)*, 121 (1997) 419-424.

2129 Pleissner, K.-P., Söding, P., Sander, S., Oswald, H., Neuss, M., Regitz-Zagrosek, V. and Fleck, E.: Dilated cardiomyopathy-associated proteins and their presentation in a WWW-accessible two-dimensional gel protein database. *Electrophoresis (Weinheim)*, 18 (1997) 802-808.

2130 Pleissner, K.-P., Sander, S., Oswald, H., Regitz-Zagrosek, V. and Fleck, E.: Towards design and comparison of World Wide Web-accessible myocardial two-dimensional gel electrophoresis protein databases. *Electrophoresis (Weinheim)*, 18 (1997) 480-483.

2131 Pliszka, B.: Influence of actin binding on the conformation of the central segment of the heavy chain of skeletal myosin subfragment 1. *Biochim. Biophys. Acta*, 1339 (1997) 126-132.

2132 Shih, C., Chen, M.G., Linse, K. and Wang, K.: Molecular contacts between nebulin and actin: cross-linking of nebulin modules to the N-terminus of actin. *Biochemistry*, 36 (1997) 1814-1825.

2133 Sutton, C.W., Wheeler, C.H., U, S., Corbett, J.M., Cottrell, J.S. and Dunn, M.J.: The analysis of myocardial proteins by infrared and ultraviolet laser desorption mass spectrometry. *Electrophoresis (Weinheim)*, 18 (1997) 424-431.

2134 Tomita, M., Kitajima, T. and Yoshizato, K.: Formation of recombinant human procollagen I heterotrimers in a baculovirus expression system. *J. Biochem. (Tokyo)*, 121 (1997) 1061-1069.

2135 Yasa, H.J., Sato, S., Yamamoto, H. and Takagi, T.: Structure of the ascidian, *Halocynthia roretzi*, troponin C gene. *J. Biochem. (Tokyo)*, 121 (1997) 671-676.

See also 1971, 2032, 2052, 2106, 2139, 2320.

19g. Protamines, histones and other nuclear proteins

- 2136 Bohm, L., Schneeweiss, F.A., Sharan, R.N. and Feinendegen, L.E.: Influence of histone acetylation on the modification of cytoplasmic and nuclear proteins by ADP-ribosylation in response to free radicals. *Biochim. Biophys. Acta*, 1334 (1997) 149-154.
- 2137 Chang, L., Loranger, S.S., Mizzen, C., Ernst, S.G., Allis, C.D. and Annunziato, A.T.: Histones in transit: cytosolic histone complexes and diacetylation of H4 during nucleosome assembly in human cells. *Biochemistry*, 36 (1997) 469-480.
- 2138 Estanol, J.M., Agell, N. and Bachs, O.: Nuclear protein patterns in normal T-lymphocytes and lymphoblastoid cells. *Cancer Res.*, 57 (1997) 55-61.
- 2139 Gilroy, S.J., Salmons, S. and Pennington, S.R.: Changes in nuclear protein composition in response to chronic electrical stimulation of skeletal muscle. *Electrophoresis (Weinheim)*, 18 (1997) 809-813.
- 2140 Jasinskas, A., Kersulyte, D., Langmore, J., Steponaviciute, D., Jasinskiene, N. and Gineitis, A.: Turnover of histone acetyl groups during sea urchin early development is not required for histone, heat shock and actin gene transcription. *Biochim. Biophys. Acta*, 1351 (1997) 168-180.
- 2141 Tanimoto, Y., Onishi, Y., Hashimoto, S. and Kizaki, H.: Peptidyl aldehyde inhibitors of proteasome induce apoptosis rapidly in mouse lymphoma RVC cells. *J. Biochem. (Tokyo)*, 121 (1997) 542-549.

- 2142 Zhelev, N.Zh., Barratt, M.J. and Mahadevan, L.C.: Use of reversed-phase high-performance liquid chromatography on polystyrene-divinylbenzene columns for the rapid separation and purification of acid-soluble nuclear proteins. *J. Chromatogr. A*, 763 (1997) 65-70.

See also 1967, 2005, 2021, 2353, 2466.

19h. Chromoproteins and metalloproteins

- 2143 Arndt, T., Hackler, R., Müller, T., Kleine, T.O. and Gressner, A.M.: Increased serum concentration of carbohydrate-deficient transferrin in patients with combined pancreas and kidney transplantation. *Clin. Chem. (Washington)*, 43 (1997) 3444-351.
- 2144 Bertrand, M., Schoefs, B., Franck, F., Barthlemy, X. and Quazzani, A.: Isolation and characterization of proteins and pigment-protein complexes of chloroplasts by electrophoretic techniques. *Bull. Soc. R. Sci. Liege*, 65 (1996) 233-242; C.A., 126 (1997) 128826m.
- 2145 Doelman, C.J.A., Siebelder, C.W.M., Nijhof, W.A., Weykamp, C.W., Janssens, J. and Penders, T.J.: Capillary electrophoresis system for hemoglobin A_{1c} determinations evaluated. *Clin. Chem. (Washington)*, 43 (1997) 644-648.
- 2146 Govindaraj, S. and Poulos, T.L.: The domain architecture of cytochrome P450BM-3. *J. Biol. Chem.*, 272 (1997) 7915-7921.
- 2147 Iourin, O., Mattu, T.S., Mian, N., Keir, G., Winchester, B., Dwek, R.A. and Rudd, P.M.: The identification of abnormal glycoforms of serum transferrin in carbohydrate deficient glycoprotein syndrome type I by capillary zone electrophoresis. *Glycoconjugate J.*, 13 (1996) 1031-1042; C.A., 126 (1997) 14164v.
- 2148 Okazaki, T., Yanagisawa, Y. and Nagai, T.: Analysis of the affinity of each haptoglobin polymer for hemoglobin by two-dimensional affinity electrophoresis. *Clin. Chim. Acta*, 258 (1997) 137-144.
- 2149 Richards, M.P. and Huang, T.-L.: Metalloprotein analysis by capillary isoelectric focusing. *J. Chromatogr. B*, 690 (1997) 43-54.
- 2150 Xiong, Y. and Ru, B.: Purification and characteristics of recombinant mouse metallothionein-I from *Escherichia coli*. *J. Biochem. (Tokyo)*, 121 (1997) 1102-1106.
- 2151 Yuan, W., Serron, S.C., Haddican, M.M., Cawley, G.F., Eyer, C.S. and Backes, W.L.: Ethylbenzene modulates the expression of different cytochrome P-450 isozymes by discrete multistep processes. *Biochim. Biophys. Acta*, 1334 (1997) 361-373.
- See also 1975, 1988, 2006.
- 19i. Proteins of glands, gland products, various zymogens (incl. milk proteins)**
- 2152 Anderson, L. and Seilhamer, J.: A comparison of selected mRNA and protein abundances in human liver. *Electrophoresis (Weinheim)*, 18 (1997) 533-537.
- 2153 Carpenter, G.H., Proctor, G.B., Pankhurst, C.L. and Shori, D.K.: Improved staining of human salivary proteins following electrophoresis. *Biochem. Soc. Trans.*, 25 (1997) 32S; C.A., 126 (1997) 274303e.
- 2154 Cattaneo, T.M.P. and Nigro, F.: Analysis of cow, goat and ewe milk mixtures by capillary zone electrophoresis (CZE). Preliminary approach. *Milchwissenschaft*, 51 (1996) 616-619; C.A., 126 (1997) 103274s.
- 2155 Chang, L.-S., Chou, L. and Chang, C.-C.: Structural determinants of cobrotoxin affect its mobility on sodium dodecyl sulphate polyacrylamide gel. *Biochem. Mol. Biol. Int.*, 40 (1996) 1227-1232; C.A., 126 (1997) 71430w.
- 2156 Cossio, G., Sanchez, J.-C., Wettstein, R. and Hochstrasser, D.F.: Spermatocytes and round spermatids of rat testis: the difference between *in vivo* and *in vitro* protein patterns. *Electrophoresis (Weinheim)*, 18 (1997) 548-552.
- 2157 Cui, Z., Shen, Y.-J. and Vance, D.E.: Inverse correlation between expression of phosphatidylethanolamine N-methyltransferase-2 and growth rate of perinatal rat livers. *Biochim. Biophys. Acta*, 1346 (1997) 10-16.
- 2158 Fornes, M.W., Barbieri, M.A. and Bertini, F.: Electrophoretic analysis of protein selectively extracted with chaotropic agents from membranes of rat sperm. *Biocell*, 20 (1996) 111-121; C.A., 126 (1997) 141718x.
- 2159 Franzén, B., Linder, S., Alaiya, A.A., Eriksson, E., Fujioka, K., Bergman, A.-C., Jörnvall, H. and Auer, G.: Analysis of polypeptide expression in benign and malignant human breast lesions. *Electrophoresis (Weinheim)*, 18 (1997) 582-587.
- 2160 Giannetti, C.S., Williams, K. and Tollaksen, S.L.: A two-dimensional electrophoresis database of human breast epithelial cell proteins. *Electrophoresis (Weinheim)*, 18 (1997) 573-581.
- 2161 Goldfarb, M.: Two-dimensional electrophoretic analysis of human milk-fat-globule membrane proteins with attention to apolipoprotein E patterns. *Electrophoresis (Weinheim)*, 18 (1997) 511-515.
- 2162 Grover, P.K. and Resnick, M.I.: High resolution two-dimensional electrophoretic analysis of urinary proteins of patients with prostatic cancer. *Electrophoresis (Weinheim)*, 18 (1997) 814-818.
- 2163 Naryzhny, S.N.: "Active" two-dimensional electrophoresis of rat liver DNA-polymerase α . *Electrophoresis (Weinheim)*, 18 (1997) 553-556.
- 2164 O'Connell, K.L. and Stults, J.T.: Identification of mouse liver proteins on two-dimensional electrophoresis gels by matrix-assisted laser desorption/ionization mass spectrometry of *in situ* enzymatic digests. *Electrophoresis (Weinheim)*, 18 (1997) 349-359.
- 2165 Pol, A., Ortega, D. and Enrich, C.: Identification and distribution of proteins in isolated endosomal fractions of rat liver: involvement in endocytosis recycling and transcytosis. *Biochem. J.*, 323 (1997) 435-443.
- 2166 Prasad, S.C., Thraves, P.J., Dritschilo, A. and Kuettel, M.R.: Protein expression changes associated with radiation-induced neoplastic progression of human prostate epithelial cells. *Electrophoresis (Weinheim)*, 18 (1997) 629-637.
- 2167 Rasmussen, R.K., Ji, H., Eddes, J.S., Moritz, R.L., Reid, G.E., Simpson, R.J. and Dorow, D.S.: Two-dimensional electrophoretic analysis of human breast carcinoma proteins: mapping of proteins that bind to the SH3 domain of mixed lineage kinase MLK2. *Electrophoresis (Weinheim)*, 18 (1997) 588-598.
- 2168 Recio, I., Pérez-Rodríguez, M.-L., Ramos, M. and Amigo, L.: Capillary electrophoretic analysis of genetic variants of milk proteins from different species. *J. Chromatogr. A*, 768 (1997) 47-56.

- 2169 Romi-Lebrun, R., Martin-Eaicleaire, M.-F., Escoubas, P., Wu, F.Q., Lebron, B., Hisada, M. and Nakajima, T.: Characterization of four toxins from *Buthus martensi* scorpion venom, which act on apamin-sensitive Ca^{2+} -activated K^+ channels. *Eur. J. Biochem.*, 245 (1997) 457-464.
- 2170 Sugiyama, H., Yamada, J., Takama, H., Kodama, Y., Watanabe, T., Taguchi, T. and Suga, T.: Photoaffinity labeling of peroxisome some proliferator binding proteins in rat hepatocytes; dehydroepiandrosterone sulfate- and bezafibrate-binding proteins. *Biochim. Biophys. Acta*, 1339 (1997) 321-330.
- 2171 Witzmann, F.A., Fultz, C.D. and Wyman, J.F.: Two-dimensional electrophoresis of precision-cut testis slices: toxicologic application. *Electrophoresis (Weinheim)*, 18 (1997) 642-646.

See also 1969, 1987, 2044, 2056.

19j. Proteins of brain, cerebrospinal fluid and eye

- 2172 Currie, J.R., Chen-Hwang, M.-C., Denman, R., Smedman, M., Potempa, A., Ramakrishna, N., Rubenstein, R., Wisniewski, H.M. and Miller, D.L.: Reduction of histone cytotoxicity by the Alzheimer β -amyloid peptide precursor. *Biochim. Biophys. Acta*, 1355 (1997) 248-258.
- 2173 Grus, F.-H., Augustin, A.J. and Zimmermann, C.W.: Computer-supported analysis (MegaBlot) of allopurinol-induced changes in the autoantibody repertoires of rats suffering from experimental lens-induced uveitis. *Electrophoresis (Weinheim)*, 18 (1997) 516-519.
- 2174 Lee, K.H. and Harrington, M.G.: The assay development of a molecular marker for transmissible spongiform encephalopathies. *Electrophoresis (Weinheim)*, 18 (1997) 502-506.
- 2175 Mok, S.S., Evin, G., Li, Q., Smith, A.I., Beyreuther, K., Masters, C.L. and Small, D.H.: A novel metalloprotease in rat brain cleaves the amyloid precursor protein of Alzheimer's disease generating amyloidogenic fragments. *Biochemistry*, 36 (1997) 156-163.
- 2176 Roder, H.M., Fracasso, R.P., Hoffman, F.J., Witowsky, J.A., Davis, G. and Pellegrino, C.B.: Phosphorylation-dependent monoclonal tau antibodies do not reliably report phosphorylation by extracellular signal-regulated kinase 2 at specific sites. *J. Biol. Chem.*, 272 (1997) 4509-4515.
- 2177 Sun, T., Das, B.K. and Liang, J.J.-N.: Conformational and functional differences between recombinant human lens α -A- and β -B-crystallin. *J. Biol. Chem.*, 272 (1997) 6220-6225.

See also 1972, 1976, 1987, 2469.

19k. Proteins of neoplastic tissue and transformed cells

- 2178 Celis, J.E., Østergaard, M., Basse, B., Celis, A., Lauridsen, J.B., Ratz, G.P., Andersen, I., Hein, B., Wolf, H., Ørntoft, T.F. and Rasmussen, H.H.: Loss of adipocyte-type fatty acid binding protein and other protein biomarkers is associated with progression of human bladder transitional cells carcinomas. *Cancer Res.*, 56 (1996) 4782-4790.
- 2179 Ji, H., Reid, G.E., Moritz, R.L., Eddes, J.S., Burgess, A.W. and Simpson, R.J.: A two-dimensional gel database of human colon carcinoma proteins. *Electrophoresis (Weinheim)*, 18 (1997) 605-613.

- 2180 Kim, S.Y., Bachman, N.J., Nair, T.S., Goldsmith, S., Liebert, M., Grossman, H.B., Lomax, M.I. and Carey, T.E.: β 4 Integrin transfection of UM-UC-2 (human bladder carcinoma) cells: stable expression of a spontaneous cytoplasmic truncation mutant with rapid loss of clones expressing intact β 4. *Cancer Res.*, 57 (1997) 38-42.
- 2181 Klein, J.M. and McCarthy, T.A.: Inhibition of tyrosine kinase activity decreases expression of surfactant protein A in a human lung adenocarcinoma cell line independent of epidermal growth factor receptor. *Biochim. Biophys. Acta*, 1355 (1997) 218-230.
- 2182 Koli, K.M. and Arteaga, C.L.: Predominant cytosolic localization of type II transforming growth factor β receptors in human breast carcinoma cells. *Cancer Res.*, 57 (1997) 970-977.
- 2183 Matsui, N.M., Smith, D.M., Clouser, K.R., Fichmann, J., Andrews, L.E., Sullivan, C.M., Burlingame, A.L. and Epstein, L.B.: Immobilized pH gradient two-dimensional gel electrophoresis and mass spectrometric identification of cytokine-regulated proteins in ME-180 cervical carcinoma cells. *Electrophoresis (Weinheim)*, 18 (1997) 409-417.
- 2184 Myers, T.G., Anderson, N.L., Waltham, M., Li, G., Buolamwini, J.K., Scudiero, D.A., Paull, K.D., Sausville, E.A. and Weinstein, J.N.: A protein expression database for the molecular pharmacology of cancer. *Electrophoresis (Weinheim)*, 18 (1997) 647-653.
- 2185 Nawata, S., Nakamura, K., Tanaka, T., Numa, F., Suminami, Y., Tsunaga, N., Kakegawa, H., Katunuma, N. and Kato, H.: Electrophoretic analysis of the "cross-class" interaction between novel inhibitory serpin, squamous cell carcinoma antigen-1 and cysteine proteinases. *Electrophoresis (Weinheim)*, 18 (1997) 784-789.
- 2186 Reymond, M.A., Sanchez, J.-C., Schneider, C., Rohwer, P., Tortola, S., Hohenberger, W., Kirchner, T., Hochstrasser, D.F. and Köckerling, F.: Specific sample preparation in colorectal cancer. *Electrophoresis (Weinheim)*, 18 (1997) 622-624.
- 2187 Sanchez, J.-C., Wirth, P., Jaccoud, S., Appel, R.D., Sarto, C., Wilkins, M.R. and Hochstrasser, D.F.: Simultaneous analysis of cyclin and oncogene expression using multiple monoclonal antibody immunoblots. *Electrophoresis (Weinheim)*, 18 (1997) 638-641.
- 2188 Sarto, C., Marocchi, A., Sanchez, J.-C., Giannone, D., Frutiger, S., Golaz, O., Wilkins, M.R., Doro, G., Cappellano, F., Hughes, G., Hochstrasser, D.F. and Mocarelli, P.: Renal cell carcinoma and normal kidney protein expression. *Electrophoresis (Weinheim)*, 18 (1997) 599-604.
- 2189 Tanaka, S., Mori, M., Akiyoshi, T., Tanaka, Y., Mafune, K., Wands, J.R. and Sugimachi, K.: Coexpression of Grb7 with epidermal growth factor receptor or Her2 erbB2 in human advanced esophageal carcinoma. *Cancer Res.*, 57 (1997) 28-31.
- 2190 Trikha, M., Timar, J., Lundy, S.K., Szekeres, K., Tang, K., Grignon, D., Porter, A.T. and Honn, K.V.: Human prostate carcinoma cells express functional α IIb β 3 integrin. *Cancer Res.*, 56 (1996) 5071-5078.
- 2191 Yano, Y., Yano, T., Uchida, M., Murakami, A., Ogita, M., Ichikawa, T., Otani, S. and Hagiwara, K.: The inhibitory effect of vitamin E on pulmonary polyamine biosynthesis, cell proliferation and carcinogenesis in mice. *Biochim. Biophys. Acta*, 1356 (1997) 35-42.

See also 2159, 2162, 2166, 2167, 2198, 2258.

- 19l. Specific binding and receptor proteins**
- 2192 Bradbury, F.A., Kawate, N., Foster, C.M. and Menon, K.M.J.: Post-translational processing in the Golgi plays a critical role in the trafficking of the luteizing hormone/human chorionic gonadotropin receptor to the cell surface. *J. Biol. Chem.*, 272 (1997) 5921-5926.
- 2193 Di Pietro, S.M. and Santomé, J.A.: Presence of two new fatty acid binding proteins in catfish liver. *Biochem. Cell Biol.*, 74 (1996) 678-680.
- 2194 Dowell, P., Peterson, V.J., Zabriskie, T.M. and Leid, M.: Ligand-induced peroxisome proliferator-activated receptor α conformational change. *J. Biol. Chem.*, 272 (1997) 2013-2020.
- 2195 Hughes, R.J., Pasillas, M., Saiz, J., Jasper, J. and Insel, P.A.: Decreased transcript expression coincident with impaired glycosylation in the β_2 -adrenergic receptor gene does not result from differences in the primary sequence. *Biochim. Biophys. Acta*, 1356 (1997) 281-291.
- 2196 Jiang, M. and Hart, G.W.: A subpopulation of estrogen receptors are modified by O-linked N-acetylglucosamine. *J. Biol. Chem.*, 272 (1997) 2421-2428.
- 2197 Kang, Y., Ziegler, R., van Antwerpen, R. and Law, J.H.: Characterization of the solubilized oocyte membrane receptor for insecticyanin, a biliprotein of the hawkmoth, *Manduca sexta*. *Biochim. Biophys. Acta*, 1324 (1997) 285-295.
- 2198 Kim, C., MacKellar, W.C., Cho, N.M., Byrn, S.R. and Morré, D.J.: Impermeant antitumor sulfonylurea conjugates that inhibit plasma membrane NADH oxidase and growth of HeLa cells in culture. Identification of binding proteins from sera of cancer patients. *Biochim. Biophys. Acta*, 1324 (1997) 171-181.
- 2199 Marusina, K., Reid, G., Gebathuler, R., Jefferies, W. and Monaco, J.J.: Novel peptide-binding proteins and peptide transport in normal and TAP-deficient microsomes. *Biochemistry*, 36 (1997) 856-863.
- 2200 Mukherjee, R., Jow, L., Croston, G.E. and Paterniti, J.R., Jr.: Identification, characterization, and tissue distribution of human peroxisome proliferator-activated receptor (PPAR) isoforms PPAR γ 2 versus PPAR γ 1 and activation with retinoid X receptor agonists and antagonists. *J. Biol. Chem.*, 272 (1997) 8071-8076.
- 2201 Nazih-Sanderson, F., Pinchon, G., Nion, S., Fruchart, J.-C. and Delbart, C.: HDL $_3$ -signalling in HepG $_2$ cells involves glycosyl-phosphatidylinositol-anchored proteins. *Biochim. Biophys. Acta*, 1346 (1997) 45-60.
- 2202 Nikolakaki, E., Meier, J., Simos, G., Georgatos, S.D. and Giannakouros, T.: Mitotic phosphorylation of the lamin B receptor by a serine/arginine kinase and p34 $\text{cdk}2$. *J. Biol. Chem.*, 272 (1997) 6208-6213.
- 2203 Nozaki, N., Naoe, T. and Okazaki, T.: Immunoaffinity purification and characterization of CACGTG sequence-binding proteins from cultured mammalian cells using an anti c-Myc monoclonal antibody recognizing the DNA-binding domain. *J. Biochem. (Tokyo)*, 121 (1997) 550-559.
- 2204 Petersen, C.M., Nielsen, M.S., Nykjær, A., Jacobsen, L., Tommerup, N., Rasmussen, H.H., Røigaard, H., Gliemann, J., Madsen, P. and Moestrup, S.K.: Molecular identification of a novel candidate sorting receptor purified from human brain by receptor-associated protein affinity chromatography. *J. Biol. Chem.*, 272 (1997) 3599-3609.
- 2205 Rutherford, C.L., Selmin, O. and Peters-Weigel, S.: Temporal regulation of the *Dictyostelium* glycogen phosphorylase 2 gene. *Biochim. Biophys. Acta*, 1351 (1997) 111-125.
- 2206 Sarig, G., Weisman-Shomer, P., Erlitzki, R. and Fry, M.: Purification and characterization of qTBP42, a new single-stranded and quadruplex telomeric DNA-binding protein from rat hepatocytes. *J. Biol. Chem.*, 272 (1997) 4474-4482.
- 2207 Tingley, W.G., Ehlers, M.D., Kemayama, K., Doherty, C., Ptak, J.B., Riley, C.T. and Huganir, R.L.: Characterization of protein kinase A and protein kinase C phosphorylation of the N-methyl-D-aspartate receptor NR1 subunit using phosphorylation site-specific antibodies. *J. Biol. Chem.*, 272 (1997) 5157-5166.
- 2208 Van Leeuwen, J.E.M. and Kearse, K.P.: Reglcosylation of N-linked glycans is critical for calnexin assembly with T cell receptor (TCR) α proteins but not TCR β proteins. *J. Biol. Chem.*, 272 (1997) 4176-4186.
- 2209 Vilim, V., Lenz, M.E., Vytasek, R., Masuda, K., Pavelka, K., Kuettner, K.E. and Thonar, E.J.-M.A.: Characterization of monoclonal antibodies recognizing different fragments of cartilage oligomeric matrix protein in human body fluids. *Arch. Biochem. Biophys.*, 341 (1997) 8-16.
- See also 2044, 2063, 2181, 2253.
- 19m. Urinary proteins**
- 2210 Levinson, S.S.: An algorithmic approach using κ/λ ratios to improve the diagnostic accuracy of urine protein electrophoresis and to reduce the volume required for immunoelectrophoresis. *Clin. Chim. Acta*, 262 (1997) 121-130.
- 19n. Other proteins (incl. proteinous inhibitors of enzymic activity)**
- 2211 Bini, L., Heid, H., Liberatori, S., Geier, G., Pallini, V. and Zwilling, R.: Two-dimensional gel electrophoresis of *Caenorhabditis elegans* homogenates and identification of protein spots by microsequencing. *Electrophoresis (Weinheim)*, 18 (1997) 557-562.
- 2212 Fukao, H., Ueshima, S., Takaishi, T., Okada, K. and Matsuo, O.: Enhancement of tissue-type plasminogen activator (t-PA) activity by purified t-PA receptor expressed in human endothelial cells. *Biochim. Biophys. Acta*, 1356 (1997) 111-120.
- 2213 Ito, Y., Li, J.-S., Takahashi, T., Imanishi, Y., Okabayashi, Y., Kido, Y. and Kasuga, M.: Enhancement of the mitogenic effect by artificial juxtarcrine stimulation using immobilized EGF. *J. Biochem. (Tokyo)*, 121 (1997) 514-520.
- 2214 Ji, H., Moritz, R.L., Reid, G.E., Ritter, G., Catimel, B., Nice, E., Heath, J.K., White, S.J., Welt, S., Old, L.J., Burgess, A.W. and Simpson, R.J.: Electrophoretic analysis of the novel antigen for the gastrointestinal-specific monoclonal antibody, A33. *Electrophoresis (Weinheim)*, 18 (1997) 614-621.
- 2215 Kang, H.A., Lee, K.N. and Yu, M.: Folding and stability of the Z and Siyama genetic variants of human α_1 -antitrypsin. *J. Biol. Chem.*, 272 (1997) 510-516.
- 2216 Karges, W., Gaedigk, R., Hui, M.F., Cheung, R. and Dosch, H.-M.: Molecular cloning of murine ICA69: diabetes-prone mice recognize the human autoimmune-epitope, Tep69, conserved in splice variants from both species. *Biochim. Biophys. Acta*, 1360 (1997) 97-101.

- 2217 Narita, Y., Oda, S.-i., Moriyama, A., Takenaka, O. and Kageyama, T.: Pepsinogens and pepsins from house musk shrew, *Suncus murinus*: purification, characterization, determination of the amino-acid sequences of the activation segments, and analysis of proteolytic specificities. *J. Biochem. (Tokyo)*, 121 (1997) 1010-1017.
- 2218 Sakwe, A.M. and Titanji, V.P.K.: Evidence for increased hydroxylation of pyrrolidine amino acid residues in the cuticle of mature *Onchocerca volvulus*. *Biochim. Biophys. Acta*, 1360 (1997) 196-202.
- 2219 Sotiropoulou, G., Anisowicz, A. and Sager, R.: Identification, cloning, and characterization of cystatin M, a novel cysteine proteinase inhibitor, down-regulated in breast cancer. *J. Biol. Chem.*, 272 (1997) 903-910.
- 2220 Stulik, J., Bures, J., Jandik, P., Langr, F., Kovarova, H. and Macela, A.: The different expression of proteins recognized by monoclonal anti-heat shock protein 70 (hsp70) antibody in human colonic diseases. *Electrophoresis (Weinheim)*, 18 (1997) 625-628.
- 2221 Weiler, A., Stoeva, S., Tsitsilonis, O.E. and Voelter, W.: Prothymosin α : efficient sequence determination by experimental and theoretical capillary electrophoretic support. *Electrophoresis (Weinheim)*, 18 (1997) 757-761.

See also 1907, 2039, 2082, 2090, 2179, 2186, 2188, 2277.

20. ENZYMES AND ENZYME ACTIVITY ESTIMATION

20a. Oxidoreductases

- 2222 Barnett, P., Kruitbosch, D.L., Hemrika, W., Dekker, H.L. and Wever, R.: The regulation of the vanadium chloroperoxidase from *Curvularia inaequalis*. *Biochim. Biophys. Acta*, 1352 (1997) 73-84.
- 2223 Dreusch, A., Bürgisser, D.M., Heizmann, C.W. and Zumft, W.G.: Lack of copper insertion into unprocessed cytoplasmic nitrous oxide reductase generated by an R20D substitution in the arginine consensus motif of the signal peptide. *Biochim. Biophys. Acta*, 1319 (1997) 311-318.
- 2224 Goncalves, M.L.F.C. and Steiner, W.: Detection of laccase activity in polyacrylamide gels after electrophoresis under denaturing conditions. *Biotechnol. Tech.*, 10 (1996) 667-668; C.A., 125 (1996) 241463h.
- 2225 Huang, D.-Y. and Ichikawa, Y.: Purification and characterization of a novel cytosolic NADP(H)-dependent retinol oxidoreductase from rabbit liver. *Biochim. Biophys. Acta*, 1338 (1997) 47-59.
- 2226 Itoga, M., Tsuchiya, M., Ishino, H. and Shimoyama, M.: Nitric oxide-induced modification of glyceraldehyde-3-phosphate dehydrogenase with NAD⁺ is not ADP-ribosylation. *J. Biochem. (Tokyo)*, 121 (1997) 1041-1046.
- 2227 Kato, C., Smorawinska, M., Li, L. and Horikoshi, K.: Comparison of the gene expression of aspartate β -D-semialdehyde dehydrogenase at elevated hydrostatic pressure in deep-sea bacteria. *J. Biochem. (Tokyo)*, 121 (1997) 717-723.
- 2228 Kelson, T.L., Secor McVoy, J.R. and Rizzo, W.B.: Human liver fatty aldehyde dehydrogenase: microsomal localization, purification, and biochemical characterization. *Biochim. Biophys. Acta*, 1335 (1997) 99-110.

- 2229 Konno, R., Sasaki, M., Asakura, S., Fukui, K., Enami, J. and Niwa, A.: D-Amino-acid oxidase is not present in the mouse liver. *Biochim. Biophys. Acta*, 1335 (1997) 173-181.
- 2230 Lee, C.Y. and Meighen, E.A.: Cysteine-286 as the site of acylation of the Lux-specific fatty acyl-CoA reductase. *Biochim. Biophys. Acta*, 1338 (1997) 215-222.
- 2231 Lynch, S.M. and Frei, B.: Physiological thiol compounds exert pro- and anti-oxidant effects, respectively, on iron- and copper-dependent oxidation of human low-density lipoprotein. *Biochim. Biophys. Acta*, 1345 (1997) 215-221.
- 2232 Purnford, N.R., Halmes, N.C., Martin, B.M., Cook, R.J., Wagner, C. and Hinson, J.A.: Covalent binding of acetaminophen to N-10-formyltetrahydrofolate dehydrogenase in mice. *J. Pharmacol. Exp. Ther.*, 280 (1997) 501-505.
- 2233 Sarkar, S., Martínez, A.T. and Martínez, M.J.: Biochemical and molecular characterization of a manganese peroxidase isoenzyme from *Pleurotus ostreatus*. *Biochim. Biophys. Acta*, 1339 (1997) 23-30.
- 2234 Takahashi, K., Hara, E., Ogawa, K., Kimura, D., Fujita, H. and Shibahara, S.: Possible implications of the induction of human heme oxygenase-1 by nitric oxide donors. *J. Biochem. (Tokyo)*, 121 (1997) 1162-1168.
- 2235 Vitai, M. and Góth, L.: Reference ranges of normal blood catalase activity and levels in familial hypocalatasemia in Hungary. *Clin. Chim. Acta*, 261 (1997) 35-42.
- 2236 Ye, B., Gitler, C. and Gressel, J.: A high-sensitivity, simple-gel, polyacrylamide gel electrophoresis method for the quantitative determination of glutathione reductases. *Anal. Biochem.*, 246 (1997) 159-165.

See also 2054, 2454.

20b. Transferases (excl. E.C. 2.7.-.-)

- 2237 Abid, M.R., Sasaki, K., Titani, K. and Miyazaki, M.: Biochemical and immunological characterization of deoxyhypusine synthase purified from the yeast *Saccharomyces carlsbergensis*. *J. Biochem. (Tokyo)*, 121 (1997) 769-778.
- 2238 Asanuma, K., Yagihashi, A. and Watanabe, N.: Characterization of the aspartate aminotransferase-immunoglobulin M complex in a Japanese woman. *Clin. Chem. (Washington)*, 43 (1997) 686-687.
- 2239 Biswas, N. and Ghosh, A.K.: Possible role of isoaspartyl methyltransferase towards regulation of acid trehalase activity in *Saccharomyces cerevisiae*. *Biochim. Biophys. Acta*, 1335 (1997) 273-282.
- 2240 Bledsoe, R.K., Dawson, P.A. and Hutson, S.M.: Cloning of the rat and human mitochondrial branched chain aminotransferases (BCAT_m). *Biochim. Biophys. Acta*, 1339 (1997) 9-13.
- 2241 Gentile, V., Porta, R., Chiosi, E., Spina, A., Valente, F., Pezone, R., Davies, P.J.A., Alaadik, A. and Illiano, G.: tTGase/Ga β protein expression inhibits adenylate cyclase activity in Balb-C 3T3 fibroblasts membranes. *Biochim. Biophys. Acta*, 1357 (1997) 115-122.
- 2242 Houweling, M., Cui, Z., Tessitore, L. and Vance, D.E.: Induction of hepatocyte proliferation after partial hepatectomy is accompanied by a markedly reduced expression of phosphatidylethanolamine N-methyltransferase-2. *Biochim. Biophys. Acta*, 1346 (1997) 1-9.

- 2243 Johnson, J.E., Aebersold, R. and Cornell, R.B.: An amphipathic α -helix is the principle membrane-embedded region of CTP:phosphocholine cytidylyltransferase. Identification of the 3-(trifluoromethyl)-3-(*m*-[¹²⁵I]iodophenyl)diazirine photolabeled domain. *Biochim. Biophys. Acta*, 1324 (1997) 273-284.
- 2244 Kamisaka, Y., Mishra, S. and Nakahara, T.: Purification and characterization of diacylglycerol acyltransferase from the lipid body fraction of an oleaginous fungus. *J. Biochem. (Tokyo)*, 121 (1997) 1107-1114.
- 2245 Lee, F.-J.S., Lin, L.-W. and Smith, J.A.: A N^a-acetyltransferase selectively transfers an acetyl group to NH₂-terminal methionine residues: purification and partial characterization. *Biochim. Biophys. Acta*, 1338 (1997) 244-252.
- 2246 Sha, S., Minakuchi, K., Higaki, N., Sato, K., Ohtsuki, K., Kurata, A., Yoshikawa, H., Kotaru, M., Masumura, T., Ichihara, K. and Tanaka, K.: Purification and characterization of glutaredoxin (thioltransferase) from rice (*Oryza sativa* L.). *J. Biochem. (Tokyo)*, 121 (1997) 842-848.
- 2247 Song, X.-Q., Fukao, T., Mitchell, G.A., Kassovska-Bratinova, S., Ugarte, M., Wanders, R.J.A., Hirayama, K., Shintaku, H., Churchill, P., Watanabe, H., Orii, T. and Kondo, N.: Succinyl-CoA:3-ketoacid coenzyme A transferase (SCOT): development of an antibody to human SCOT and diagnostic use in hereditary SCOT deficiency. *Biochim. Biophys. Acta*, 1360 (1997) 151-156.
- 2248 Yanagidani, S., Uozumi, N., Ihara, Y., Miyoshi, E., Yamaguchi, N. and Taniguchi, N.: Purification and cDNA cloning of GDP-L-Fuc:N-acetyl- β -D-glucosaminide: α 1-6 fucosyltransferase (α 1-6 FucT) from human gastric cancer MKN45 cells. *J. Biochem. (Tokyo)*, 121 (1997) 626-632.

See also 1967, 1973, 1974, 2342.

20c. Transferases transferring phosphorus containing groups (E.C. 2.7.-.)

- 2249 Bianchi, M., Crinelli, R., Serafini, G., Giammarini, C. and Magnani, M.: Molecular bases of hexokinase deficiency. *Biochim. Biophys. Acta*, 1360 (1997) 211-221.
- 2250 Charrier, V., Deutscher, J., Galinier, A. and Martin-Verstraete, I.: Protein phosphorylation chain of a *Bacillus subtilis* fructose-specific phosphotransferase system and its participation in regulation of the expression of the lev operon. *Biochemistry*, 36 (1997) 1163-1172.
- 2251 Couton, F., Clottes, E. and Vial, C.: High salt concentrations induce dissociation of dimeric rabbit muscle creatine kinase. Physico-chemical characterization of the monomeric species. *Biochim. Biophys. Acta*, 1339 (1997) 277-288.
- 2252 Douglas, D.N., Fink, H.-S., Rosé, S.D., Ridgway, N.D., Cook, H.W. and Byers, D.M.: Inhibitors of actin polymerization and calmodulin binding enhance protein kinase C-induced translocation of MARCKS in C6 glioma cells. *Biochim. Biophys. Acta*, 1356 (1997) 121-130.
- 2253 Goldstone, S.D. and Hunt, N.H.: Redox regulation of the mitogen-activated protein kinase pathway during lymphocyte activation. *Biochim. Biophys. Acta*, 1355 (1997) 353-360.
- 2254 Hung, W., Olson, K.A., Breitkreutz, A. and Sadowski, I.: Characterization of the basal and pheromone-stimulated phosphorylation states of Stc12p. *Eur. J. Biochem.*, 245 (1997) 241-251.

- 2255 Mikulits, W., Knöfler, M., Stiegler, P., Dolznig, H., Wintersberger, E. and Müllner, E.W.: Mouse thymidine kinase stability *in vivo* and after *in vitro* translation. *Biochim. Biophys. Acta*, 1338 (1997) 267-274.
- 2256 Ramachandiran, S., Takezawa, D., Wang, W. and Poovaiah, B.W.: Functional domains of plant chimeric calcium/calmodulin-dependent protein kinase: regulation by autoinhibitory and visinin-like domains. *J. Biochem. (Tokyo)*, 121 (1997) 984-990.
- 2257 Tanaka, N., Tonai, T. and Kunugi, S.: Site-specific modification of rabbit muscle creatine kinase with sulphydryl-specific fluorescence probe by use of hydrostatic pressure. *Biochim. Biophys. Acta*, 1339 (1997) 226-232.
- 2258 Tombes, R.M. and Krystal, G.W.: Identification of novel human tumor cell-specific CaMK-II variants. *Biochim. Biophys. Acta*, 1355 (1997) 281-292.
- 2259 Van Riper, D.A., McDaniel, N.L. and Rembold, C.M.: Mysoin light chain kinase phosphorylation in nitrovasodilator induced swine carotid artery relaxation. *Biochim. Biophys. Acta*, 1355 (1997) 323-330.
- See also 1968, 2022, 2044, 2363.
- 20d. Hydrolases, acting on ester bonds (E.C. 3.1.-.)*
- 2260 Augeri, L., Lee, Y., Barton, A.B. and Boetsch, P.W.: Purification, characterization, gene cloning, and expression of *Saccharomyces cerevisiae* redoxyendonuclease, a homolog of *Escherichia coli* endonuclease III. *Biochemistry*, 36 (1997) 721-729.
- 2261 Ekholm, D., Belfrage, P., Manganiello, V. and Degerman, E.: Protein kinase A-dependent activation of PDE4 (cAMP-specific cyclic nucleotide phosphodiesterase) in cultured bovine vascular smooth muscle cells. *Biochim. Biophys. Acta*, 1356 (1997) 64-70.
- 2262 Frobert, Y., Crémillon, C., Cousin, X., Rémy, M.-H., Chatel, J.-M., Bon, S., Bon, C. and Grassi, J.: Acetylcholinesterases from Elapidae snake venoms: biochemical, immunological and enzymatic characterization. *Biochim. Biophys. Acta*, 1339 (1997) 253-267.
- 2263 Hari, T., Bütkofer, P., Wiesmann, U.N. and Brodbeck, U.: Uptake and intracellular stability of glycosylphosphatidylinositol-specific phospholipase D in neuroblastoma cells. *Biochim. Biophys. Acta*, 1355 (1997) 293-302.
- 2264 Hoshino, T.: (Determination of alkaline phosphatase isoenzymes). *Med. Technol. (Tokyo)*, 25 (1997) 109-116; C.A., 126 (1997) 196614r - a review with 17 refs.
- 2265 Liu, Y. and Levy, R.: Phospholipase A₂ has a role in proliferation but not in differentiation of HL-60 cells. *Biochim. Biophys. Acta*, 1355 (1997) 270-280.
- 2266 Matecki, A. and Pawelczyk, T.: Regulation of phospholipase C 81 by sphingosine. *Biochim. Biophys. Acta*, 1325 (1997) 287-296.
- 2267 Muñoz-Perez, M., Sarrion-Pelous, D., Jimenez-Jimenez, J., Martinez-Montiel, P. and Gallego-Valdes, M.: Chronic increased serum lipase in a patient with suspected pancreatic adenocarcinoma. *Clin. Chem. (Washington)*, 43 (1997) 191-193.
- 2268 Pandey, S., Walker, P.R. and Sikorska, M.: Identification of a novel 97 kDa endonuclease capable of internucleosomal DNA cleavage. *Biochemistry*, 36 (1997) 711-720.

- 2269 Vervoordeldonk, M.J.B.M., van Rossum, G.S.A.T., Sanchez, R.M., Neys, F.W. and van den Bosch, H.: Half-life of interleukin-1 β -induced group II phospholipase A₂ in rat mesangial cells. *Biochim. Biophys. Acta*, 1355 (1997) 315-322.
- 2270 Wada, A., Tojo, H., Sugiura, T., Fujiwara, Y., Kamada, T., Ueda, N. and Okamoto, M.: Group II phospholipase A₂ as an autocrine growth factor mediating interleukin-1 action on mesangial cells. *Biochim. Biophys. Acta*, 1345 (1997) 99-108.

For additional information see C.A.:
126 (1997) 250303d.

20e. Hydrolases, acting on glycosyl compounds (E.C. 3.2.-)

- 2271 Becerra, M., Cerdán, E. and González Siso, M.I.: Heterologous *Kluyveromyces lactis* β -galactosidase production and release by *Saccharomyces cerevisiae* osmotic-remedial thermosensitive autolytic mutants. *Biochim. Biophys. Acta*, 1335 (1997) 235-241.
- 2272 Craig, S.P., III, Focia, P.J. and Fletterick, R.J.: Substitution of lysine for arginine at position 199 of a hypoxanthine phosphoribosyltransferase interferes with binding of the primary substrate to the active site. *Biochim. Biophys. Acta*, 1339 (1997) 1-3.
- 2273 Kato, J., Takada, N., Ishii, S., Ito, T., Ogihara, J. and Oishi, K.: (Electrophoretic analysis of chitinases in gramineous plants). *Kichin Kitosan Kenkyu*, 2 (1996) 210-216; C.A., 126 (1997) 71843h.
- 2274 Numata, Y., Morita, A., Kossugi, Y., Shibata, K., Takeuchi, N. and Uchida, K.: New sandwich ELISA for human urinary N-acetyl- β -D-glucosaminidase isoenzyme B as a useful clinical test. *Clin. Chem. (Washington)*, 43 (1997) 569-574.
- 2275 Taylor, M.R., Westwood, S.A. and Perrett, D.: Direct monitoring of enzyme reactions using micellar electrokinetic capillary chromatography. Optimisation of drug glucuronide and sulfate conjugate hydrolysis. *J. Chromatogr. A*, 768 (1997) 67-71.
- 2276 Zeleny, R., Altmann, F. and Praznik, W.: A capillary electrophoretic study of the specificity of β -galactosidases from *Aspergillus oryzae*, *Escherichia coli*, *Streptococcus pneumoniae* and *Canavalia ensiformis* (jack bean). *Anal. Biochem.*, 246 (1997) 96-101.
- See also 2195.
- 20f. Other hydrolases**
- 2277 Aguirre Ghiso, J.A., Alonso, D.F., Farías, E.F. and Bal de Kier Joffé, E.: Overproduction of urokinase-type plasminogen activator is regulated by phospholipase D- and protein kinase C-dependent pathways in murine mammary adenocarcinoma cells. *Biochim. Biophys. Acta*, 1356 (1997) 171-184.
- 2278 Dunn, S.D.: σ -Binding regions of the γ subunit of *Escherichia coli* ATP synthase. *Biochim. Biophys. Acta*, 1319 (1997) 177-184.
- 2279 Gyimesi, J., Szoko, E., Magyar, K. and Barcza, L.: Determination of drug-cyclodextrin binding constants by capillary zone electrophoresis. *J. Inclusion Phenom. Mol. Recognit. Chem.*, 25 (1996) 253-256; C.A., 126 (1997) 148385v.
- 2280 Hesp, J.R. and Hooper, N.M.: Proteolytic fragmentation reveals the oligomeric and domain structure of porcine aminopeptidase A. *Biochemistry*, 36 (1997) 3000-3007.
- 2281 Magbanua, J.P.V., Ogawa, N., Harashima, S. and Oshima, Y.: The transcriptional activators of the PHO regulon, Pho4p and Pho2p, interact directly with each other and with components of the basal transcription machinery in *Saccharomyces cerevisiae*. *J. Biochem. (Tokyo)*, 121 (1997) 1182-1189.
- 2282 Mori, K., Kii, S., Tsuji, A., Nagahama, M., Imamaki, A., Hayashi, K., Akamatsu, T., Nagamune, H. and Matsuda, Y.: A novel human PACE4 isoform, PACE4E is an active processing protease containing a hydrophobic cluster at the carboxy terminus. *J. Biochem. (Tokyo)*, 121 (1997) 941-948.
- 2283 Nishi, T., Kubo, K., Hasebe, M., Maeda, M. and Futai, M.: Transcriptional activation of H⁺/K⁺-ATPase genes by gastric GATA binding proteins. *J. Biochem. (Tokyo)*, 121 (1997) 922-929.
- 2284 Nishijo, T., Kawada, A., Kanno, T., Shiraiwa, M. and Takahara, H.: Isolation and molecular cloning of epidermal- and hair follicle-specific peptidylarginine deiminase (type III) from rat. *J. Biochem. (Tokyo)*, 121 (1997) 868-875.
- 2285 Nishinaka, T., Fu, Y.-H.F., Chen, L.I., Yokoyama, K. and Chiu, R.: A unique cathepsin-like protease isolated from CV-1 cells is involved in rapid degradation of retinoblastoma susceptibility gene product, RB, and transcription factor SP1. *Biochim. Biophys. Acta*, 1351 (1997) 274-286.
- 2286 Oehler, R.D. and Clark, W.M.: β -Lactamase recovery from *E. coli* cell lysate via two-phase electrophoresis. *Biotechnol. Prog.*, 12 (1996) 873-876; C.A., 126 (1997) 16401n.
- 2287 Ohnishi, Y., Beppu, T. and Horinouchi, S.: Two genes encoding serine protease homologues in *Serratia marcescens* and characterization of their products in *Escherichia coli*. *J. Biochem. (Tokyo)*, 121 (1997) 902-913.
- 2288 Okamoto, T., Akaike, T., Suga, M., Tanase, S., Horie, H., Miyajima, S., Ando, M., Ichinose, Y. and Maeda, H.: Activation of human matrix metalloproteinases by various bacterial proteinases. *J. Biol. Chem.*, 272 (1997) 6059-6066.
- 2289 Reseland, J.E., Larsen, F., Solheim, J., Eriksen, J.A., Hanssen, L.E. and Prydz, H.: A novel human chymotrypsin-like digestive enzyme. *J. Biol. Chem.*, 272 (1997) 8099-8104.
- 2290 Shao, H., Robek, M.D., Threadgill, D.S., Mankowski, L.S., Cameron, C.E., Fuller, F.J. and Payne, S.L.: Characterization and mutational studies of equine infectious anemia virus dUTPase. *Biochim. Biophys. Acta*, 1339 (1997) 181-191.
- 2291 Smith, T.S., Graham, M., Munn, E.A., Newton, S.E., Knox, D.P., Coadwell, W.J., McMichael-Phillips, D., Smith, H., Smith, W.D. and Oliver, J.J.: Cloning and characterization of a microsomal aminopeptidase from the intestine of the nematode *Haemonchus contortus*. *Biochim. Biophys. Acta*, 1338 (1997) 295-306.
- 2292 Stano, J., Kovacs, P., Psenak, M., Gajdos, J., Erdelsky, K., Kakoniova, D. and Neubert, K.: Distribution of dipeptidyl peptidase IV in organs and tissue cultures of poppy plants *Papaver somniferum* L. cv. Amarin. *Pharmazie*, 52 (1997) 319-321.
- 2293 Suzuki, K.-M., Hosoya, N., Takahashi, T., Kosaka, T. and Hosoya, H.: Release of a newly-identified cysteine protease, tetraein, from *Tetrahymena* into culture medium during the cell growth. *J. Biochem. (Tokyo)*, 121 (1997) 642-647.
- 2294 Wati, M.R., Thanabalu, T. and Porter, A.G.: Gene from tropical *Bacillus sphaericus* encoding a protease closely related to subtilisins from Antarctic bacilli. *Biochim. Biophys. Acta*, 1352 (1997) 56-62.

- 2295 Wilson, S.I., Phylip, L.H., Mills, J.S., Gulnik, S.V., Erickson, J.W., Dunn, B.M. and Kay, J.: Escape mutants of HIV-1 proteinase: enzymic efficiency and susceptibility to inhibition. *Biochim. Biophys. Acta*, 1339 (1997) 113-125.
- 2296 Windsor, L.J., Steele, D.L., LeBlanc, S.B. and Taylor, K.B.: Catalytic domain comparisons of human fibroblast-type collagenase, stromelysin-1, and matrixlysin. *Biochim. Biophys. Acta*, 1334 (1997) 261-272.

See also 2217.

20g. Lyases

- 2297 Nakagawa, S., Okaya, Y., Yatsunami, K., Tanaka, S., Ohtsu, H., Fukui, T., Watanabe, T. and Ichikawa, A.: Identification of multiple regulatory elements of human L-histidine decarboxylase gene. *J. Biochem. (Tokyo)*, 121 (1997) 935-940.
- 2298 Namchuk, M., Lindsay, L., Turck, C.W., Kanaani, J. and Baekkeskov, S.: Phosphorylation of serine residues 3, 6, 10, and 13 distinguishes membrane anchored from soluble glutamic acid decarboxylase 65 and is restricted to glutamic acid decarboxylase 65 α . *J. Biol. Chem.*, 272 (1997) 1548-1557.
- 2299 Yu, S., Christensen, T.M.I.E., Kragh, K.M., Bojsen, K. and Marcussen, J.: Efficient purification, characterization and partial amino acid sequencing of two α -1,4-glucan lyases from fungi. *Biochim. Biophys. Acta*, 1339 (1997) 311-320.

20h. Isomerases

- 2300 Liu, L., Yoshimura, T., Endo, K., Esaki, N. and Soda, K.: Cloning and expression of the glutamate racemase gene of *Bacillus pu-milus*. *J. Biochem. (Tokyo)*, 121 (1997) 1155-1161.
- 2301 Talent, J.M., Zvaigzne, A.I., Agarwal, N. and Gracy, R.W.: Effect of active-site modification on the terminal marking deamidation of triosephosphate isomerase. *Arch. Biochem. Biophys.*, 340 (1997) 27-35.

See also 2434.

20j. Complex mixtures and incompletely identified enzymes

- 2302 Byrne, C.R., Price, K.J., Williams, J.M., Brown, J.F., Hanson, P.J. and Whittle, B.J.R.: Nitric oxide synthase and arginase in cells isolated from the rat gastric mucosa. *Biochim. Biophys. Acta*, 1356 (1997) 131-139.
- 2303 D'Aniello, A., Denucé, M.J., de Vincentiis, M., di Fiore, M.M. and Scippa, S.: Hatching enzyme from the sea-squirt *Ciona intestinalis*: purification and properties. *Biochim. Biophys. Acta*, 1339 (1997) 101-112.
- 2304 Kita, K., Mashiba, S.-i., Nagita, M., Ishimaru, K., Okamoto, K., Yanase, H. and Kato, N.: Cloning of poly(3-hydroxybutyrate) depolymerase from a marine bacterium, *Alcaligenes faecalis* AE122, and characterization of its gene product. *Biochim. Biophys. Acta*, 1352 (1997) 113-122.
- 2305 Wohlfeil, E.R. and Campbell, W.B.: 25-Hydroxycholesterol enhances eicosanoid production in cultured bovine coronary artery endothelial cells by increasing prostaglandin G/H synthase-2. *Biochim. Biophys. Acta*, 1345 (1997) 109-120.

21. PURINES, PYRIMIDINES, NUCLEIC ACIDS AND THEIR CONSTITUENTS

21a. Purines, pyrimidines, nucleosides, nucleotides

- 2306 Abe, E., Sumito, C., Baba, Y. and Tsuhako, M.: (DNA polymorphism analysis of repeated sequence in human genome using capillary electrophoresis). *Kuromatogurafu*, 17 (1996) 340-341; C.A., 126 (1997) 127458f.
- 2307 Buscher, B.A.P., Tjaden, U.R. and van der Greef, J.: On-line electrodialysis-capillary zone electrophoresis of adenosine triphosphate and inositol phosphates. *J. Chromatogr. A*, 764 (1997) 135-142.
- 2308 Chen, S.-H., Qian, M., Brennan, J.M. and Gallo, J.M.: Determination of antisense phosphorothioate oligonucleotides and catabolites in biological fluids and tissue extracts using anion-exchange high-performance liquid chromatography and capillary gel electrophoresis. *J. Chromatogr. B*, 692 (1997) 43-51.
- 2309 Crosbie, S.J., Boobis, A.R. and Gooperham, N.J.: Analysis of the N-(deoxyguanosin-8-yl) adduct of the food derived carcinogen PhIP using capillary electrophoresis. *Biochem. Soc. Trans.*, 25 (1997) 27S; C.A., 126 (1997) 221517w.
- 2310 Csar, X.E., Ward, A.C., Hoffmann, B.W., Guy, G.G. and Hamilton, J.A.: cAMP suppresses p21^{ras} and Raf-1 responses but not the Erk-1 response to granulocyte-colony-stimulating factor: possible Raf-1-independent activation of Erk-1. *Biochem. J.*, 322 (1997) 79-87.
- 2311 Day, I.N.M., O'dell, S.D., Weavind, G.P. and Humphries, S.E.: Large-scale electrophoretic studies: microplate array diagonal gel electrophoresis (MADGE) and profiling of oligonucleotide dissociation by gel electrophoresis (PODGE). In: Taylor, G.R. (Editor), *Lab. Methods Detect. Mutat. Polymorphisms DNA*, CRC, Boca Raton, 1997, pp. 287-306; C.A., 126 (1997) 248481s.
- 2312 Gardner, L.P., Mookhtar, K.A. and Coleman, J.E.: Initiation, elongation, and processivity of carboxyl-terminal mutants of T7 RNA polymerase. *Biochemistry*, 36 (1997) 2908-2918.
- 2313 Kamaryt, J., Muchova, M. and Stejskal, J.: Determination of adenosine phosphates in whole blood by capillary electrophoresis. *Eur. J. Clin. Chem. Clin. Biochem.*, 34 (1996) 969-973.
- 2314 Liebich, H.M., Xu, G., di Stefano, C., Lehmann, R., Häring, H.U., Lu, P. and Zhang, Y.: Analysis of normal and modified nucleosides in urine by capillary electrophoresis. *Chromatographia*, 45 (1997) 396-401.
- 2315 Sevcik, J., Adam, T. and Sazel, V.: A rapid and simple screening method for detection of orotic aciduria by capillary zone electrophoresis. *Clin. Chim. Acta*, 259 (1997) 73-81.
- 2316 Stoyanov, A.V., Gelfi, C. and Righetti, P.G.: Capillary zone electrophoresis of oligonucleotides in isoelectric buffers and against a stationary pH gradient. *Electrophoresis (Weinheim)*, 18 (1997) 717-723.

See also 1848, 2478.

21b. Nucleic acids, RNA

- 2317 Ahn, K.-S. and Henney, H.R., Jr.: Nucleotide sequence and developmental expression of *Acanthamoeba* S-adenosylmethionine synthetase gene. *Biochim. Biophys. Acta*, 1351 (1997) 223-230.
- 2318 Aoki, N., Ishii, T., Ohira, S., Yamaguchi, Y., Negi, M., Adachi, T., Nakamura, R. and Matsuda, T.: Stage specific expression of milk fat globule membrane glycoproteins in mouse mammary gland: comparison of MFG-E8, butyrophilin, and CD36 with a major milk protein, β -casein. *Biochim. Biophys. Acta*, 1334 (1997) 182-190.
- 2319 Chen, M., Goyal, S., Cai, X., O'Toole, E.A. and Woodley, D.T.: Modulation of type VII collagen (anchoring fibril) expression by retinoids in human skin cells. *Biochim. Biophys. Acta*, 1351 (1997) 333-340.
- 2320 Durko, M., Navab, R., Shibata, H.R. and Brodt, P.: Suppression of basement membrane type IV collagen degradation and cell invasion in human melanoma cells expressing an antisense RNA for MMP-1. *Biochim. Biophys. Acta*, 1356 (1997) 271-280.
- 2321 El-Din El-Husseini, A., Guthrie, H., Snutch, T.P. and Vincent, S.R.: Molecular cloning of a mammalian homologue of the yeast vesicular transport protein vps45. *Biochim. Biophys. Acta*, 1325 (1997) 8-12.
- 2322 Fasco, M.J.: Quantitation of estrogen receptor mRNA and its alternatively spliced mRNAs in breast tumor cells and tissues. *Anal. Biochem.*, 245 (1997) 167-178.
- 2323 Han, X., Budreau, A.M. and Chesney, R.W.: Adaptive regulation of MDCK cell taurine transporter (pNCT) mRNA: transcription of pNCT gene is regulated by external taurine concentration. *Biochim. Biophys. Acta*, 1351 (1997) 296-304.
- 2324 Hayakawa, Y., Hayashi, T., Hayashi, K., Ozawa, T., Niiya, K. and Sakuragawa, N.: Calcium spirulan as an inducer of tissue-type plasminogen activator in human fetal lung fibroblasts. *Biochim. Biophys. Acta*, 1355 (1997) 241-247.
- 2325 Hayashi, Y., Kiyono, T., Fujita, M. and Ishibashi, M.: Isolation of a novel cDNA whose corresponding mRNA is accumulated in growth-arrested confluent but not in growing sub-confluent rat 3Y1 cells. *Biochim. Biophys. Acta*, 1352 (1997) 145-150.
- 2326 Heal, R.D. and McGivian, J.D.: Induction of the stress protein Grp75 by amino acid deprivation in CHO cells does not involve an increase in Grp75 mRNA levels. *Biochim. Biophys. Acta*, 1357 (1997) 31-40.
- 2327 Hirano, K., Hirano, M. and Hartshorne, D.J.: Cloning and characterization of a protein phosphatase type 1-binding subunit from smooth muscle similar to the glycogen-binding subunit of liver. *Biochim. Biophys. Acta*, 1339 (1997) 177-180.
- 2328 Ikeda, M., Saito, T., Yokogawa, T. and Nishikawa, K.: Non-radioisotopic assay method for tRNA aminoacylation. *Nucleic Acids Symp. Ser.*, 35 (1996) 285-286; C.A., 126 (1997) 72219w.
- 2329 Kapelle, M., Krätzschmar, J., Husemann, M. and Schleuning, W.-D.: cDNA cloning of two closely related forms of human germ cell nuclear factor (GCNF). *Biochim. Biophys. Acta*, 1352 (1997) 13-17.
- 2330 Khatri, I.A., Forstner, G.G. and Forstner, J.F.: The carboxyl-terminal sequence of rat intestinal mucin RMuc3 contains a putative transmembrane region and two EGF-like motifs. *Biochim. Biophys. Acta*, 1326 (1997) 7-11.
- 2331 Kuusela, P., Jacobsson, A., Klingenspor, M., Rehnmark, S., Heldmaier, G., Cannon, B. and Nedergaard, J.: Contrasting adrenergic effects on lipoprotein lipase gene expression in the brown adipose tissue of intact mice and in cultured brown adipocytes from mice. *Biochim. Biophys. Acta*, 1345 (1997) 327-337.
- 2332 Landau, J.M., Sekowski, A. and Hamm, M.W.: Dietary cholesterol and the activity of stearoyl CoA desaturase in rats: evidence for an indirect regulatory effect. *Biochim. Biophys. Acta*, 1345 (1997) 349-357.
- 2333 Laubach, V.E., Zhang, C.X., Russell, S.W., Murphy, W.J. and Sherman, P.A.: Analysis of expression and promoter function of the human inducible nitric oxide synthase gene in DLD-1 cells and monkey hepatocytes. *Biochim. Biophys. Acta*, 1351 (1997) 287-295.
- 2334 Laustsen, P.G., Rasmussen, T.E., Petersen, K., Pedraza-Diaz, S., Moestrup, S.K., Gliemann, J., Sottrup-Jensen, L. and Kristensen, T.: The complete amino acid sequence of human placental oxytocinase. *Biochim. Biophys. Acta*, 1352 (1997) 1-7.
- 2335 Levy, N.S., Goldberg, M.A. and Levy, A.P.: Sequencing of the human vascular endothelial growth factor (VEGF) 3' untranslated region (UTR): conservation of five hypoxia-inducible RNA-protein binding sites. *Biochim. Biophys. Acta*, 1352 (1997) 167-173.
- 2336 Liu, K. and Kao, K.J.: Measurement of relative quantities of different HLA-A and -B mRNAs in cells by reverse transcription-polymerase chain reaction and denaturing gradient gel electrophoresis. *J. Immunol. Methods*, 203 (1997) 67-75; C.A., 126 (1997) 276017p.
- 2337 Maelandsmo, G.M., Hovig, E., Skrede, M., Engebraaten, O., Flørenes, V.A., Myklebost, O., Grigorian, M., Lukanidin, E., Scanlon, K.J. and Fodstad, Ø.: Reversal of the *in vivo* metastatic phenotype of human tumor cells by an anti-CAPL (mts1) ribozyme. *Cancer Res.*, 56 (1996) 5490-5498.
- 2338 Manteuffel-Cymborowska, M., Peska, M., Chmurzynska, W. and Grzelakowska-Sztabert, B.: Catecholamines are required for androgen-induced ODC expression but not for hypertrophy of mouse kidney. *Biochim. Biophys. Acta*, 1356 (1997) 292-298.
- 2339 Massmann, S., Schürmann, A. and Joost, H.-G.: Cloning of two splicing variants of the novel Ras-related GTPase Rab29 which is predominately expressed in kidney. *Biochim. Biophys. Acta*, 1352 (1997) 48-55.
- 2340 Maule, J.: Physical mapping by pulsed-field gel electrophoresis. *Methods Mol. Biol. (Totowa)*, 68 (1997) 93-121; C.A., 126 (1997) 15259k.
- 2341 McGuire, M.J., Lipsky, P.E. and Thiele, D.L.: Cloning and characterization of the cDNA encoding mouse dipeptidyl peptidase I (cathepsin C). *Biochim. Biophys. Acta*, 1351 (1997) 267-273.
- 2342 Nagai, T., Harigae, H., Furuyama, K., Munakata, H., Hayashi, N., Endo, K., Sassa, S. and Yamamoto, M.: 5-Aminolevulinate synthase expression and hemoglobin synthesis in a human myelogenous leukemia cell line. *J. Biochem. (Tokyo)*, 121 (1997) 487-495.
- 2343 Nairn, C.J., Niedz, R.P., Hearn, C.J., Osswald, W.F. and Mayer, R.T.: cDNA Cloning and expression of a class II acidic chitinase from sweet orange. *Biochim. Biophys. Acta*, 1351 (1997) 22-26.
- 2344 Navarra, P., Grohmann, U., Nocentini, G., Tringali, G., Puccetti, P., Riccardi, C. and Preziosi, P.: Hydroxyurea induces the gene expression and synthesis of proinflammatory cytokines *in vivo*. *J. Pharmacol. Exp. Ther.*, 280 (1997) 477-482.

- 2345 Neve, B.P., Hoogerbrugge, N., Verhoeven, A.J.M., Birkenhäger, J.C. and Jansen, H.: Growth hormone restores hepatic lipase mRNA levels but the translation is impaired in hepatocytes of hypothyroid rats. *Biochim. Biophys. Acta*, 1345 (1997) 172-179.
- 2346 Noben-Trauth, K., Naggett, J.K. and Nishina, P.M.: Cloning and expression analysis of mouse *Cclp1*, a new gene encoding a coiled-coil-like protein. *Biochim. Biophys. Acta*, 1352 (1997) 133-137.
- 2347 Ohtsuki, S., Homma, K.-i., Kurata, S. and Natori, S.: Nuclear localization and involvement in DNA synthesis of *Sarcophaga* prolyl endopeptidase. *J. Biochem. (Tokyo)*, 121 (1997) 1176-1181.
- 2348 Oka, M., Kimata, Y., Mori, K. and Kohno, K.: *Saccharomyces cerevisiae* KAR2 (BiP) gene expression is induced by loss of cytosolic HSP70/Ssa1p through a heat shock element-mediated pathway. *J. Biochem. (Tokyo)*, 121 (1997) 578-584.
- 2349 Pellizzari, R., Anjard, C. and Bisson, R.: Subunits I and II of *Dictyostelium* cytochrome c oxidase are specified by a single open reading frame transcribed into a large polycistronic RNA. *Biochim. Biophys. Acta*, 1320 (1997) 1-7.
- 2350 Penhoat, A., Naville, D., Jaillard, C., Durand, P. and Bégeot, M.: Presence of multiple functional polyadenylation signals in the 3'-untranslated region of human corticotropin receptor cDNA. *Biochim. Biophys. Acta*, 1356 (1997) 249-252.
- 2351 Scheinert, P.: (Electrophoresis system for nucleic acids and gel staining methods). *BioTec (Marktheidenfeld)*, 8 (1996) 47-49; C.A., 126 (1997) 248482t.
- 2352 Shimizu, F., Watanabe, T.K., Okuno, S., Omori, Y., Fujiwara, T., Takahashi, E.-i. and Nakamura, Y.: Isolation of a novel human cDNA (rhoHP1) homologous to rho genes. *Biochim. Biophys. Acta*, 1351 (1997) 13-16.
- 2353 Sun, B., Jayaseelan, K., Chung, M.C.M., Tan, T.-W., chock, P.B. and Teo, T.-S.: Cloning, characterization and expression of a cDNA clone encoding rabbit ubiquitin-conjugating enzyme, E2_{32k}. *Biochim. Biophys. Acta*, 1351 (1997) 231-238.
- 2354 Szamel, M., Ebel, U., Uciechowski, P., Kaever, V. and Resch, K.: T cell antigen receptor dependent signalling in human lymphocytes: cholera toxin inhibits interleukin-2 receptor expression but not interleukin-2 synthesis by preventing activation of a protein kinase C isotype, PKC- α . *Biochim. Biophys. Acta*, 1356 (1997) 237-248.
- 2355 Takano, M., Kondo, J., Yayama, K., Otani, M., Sano, K. and Okamoto, H.: Molecular cloning of cDNAs for mouse low-molecular-weight and high-molecular-weight prekininogens. *Biochim. Biophys. Acta*, 1352 (1997) 222-230.
- 2356 Tanaka, K., Handel, K., Loewen, P.C. and Takahashi, H.: Identification and analysis of the rpoS-dependent promoter of katE, encoding catalase HPII in *Escherichia coli*. *Biochim. Biophys. Acta*, 1352 (1997) 161-166.
- 2357 Tanaka, Y., Ohta, A., Terashima, K. and Sakamoto, H.: Polycistronic expression and RNA-binding specificity of the *C. elegans* homologue of the spliceosome-associated protein SAP49. *J. Biochem. (Tokyo)*, 121 (1997) 739-745.
- 2358 Umehara, T., Kida, S., Hasegawa, S., Fujimoto, H. and Horikoshi, M.: Restricted expression of a member of the transcription elongation factor S-II family in testicular germ cells during and after meiosis. *J. Biochem. (Tokyo)*, 121 (1997) 598-603.
- 2359 Valdenaire, O., Giller, T., Breu, V., Gottowik, J. and Kilpatrick, G.: A new functional isoform of the human CRF₂ receptor for corticotropin-releasing factor. *Biochim. Biophys. Acta*, 1352 (1997) 129-132.
- 2360 Vanegas, N., Castañeda, V., Santamaría, D., Hernández, P., Schwartzman, J.B. and Krimer, D.B.: Cloning, sequencing and expression in MEL cells of a cDNA encoding the mouse ribosomal protein S5. *Biochim. Biophys. Acta*, 1357 (1997) 1-4.
- 2361 Vanhove, B., Goret, F., Soulliou, J.-P. and Pourcel, C.: Porcine α ,_{1,3}-galactosyltransferase: tissue-specific and regulated expression of splicing isoforms. *Biochim. Biophys. Acta*, 1356 (1997) 1-11.
- 2362 Woodfield, K.-Y., Price, N.T. and Halestrap, A.P.: cDNA Cloning of rat mitochondrial cyclophilin. *Biochim. Biophys. Acta*, 1351 (1997) 27-30.
- 2363 Yokokura, H., Terada, O., Naito, Y. and Hidaka, H.: Isolation and comparison of rat cDNAs encoding Ca^{2+} /calmodulin-dependent protein kinase I isoforms. *Biochim. Biophys. Acta*, 1338 (1997) 8-12.
- 2364 Zwain, I.H., Yen, S.S.C. and Cheng, C.Y.: Astrocytes cultured *in vitro* produce estradiol-17 β and express aromatase cytochrome P-450 (P-450 AROM) mRNA. *Biochim. Biophys. Acta*, 1334 (1997) 338-348.
- See also 2037, 2045, 2121, 2152, 2157, 2241, 2242, 2255, 2269, 2385, 2391, 2392, 2407, 2432, 2542.
- 21c. Nucleic acids, DNA
- 2365 Akerman, B.: Barriers against DNA-loop formation in a porous matrix. *Phys. Rev. E: Stat. Phys., Plasmas, Fluids, Relat. Interdiscip. Top.*, 54 (1996) 6685-6696; C.A., 126 (1997) 141639x.
- 2366 Akerman, B.: Tube leakage during electrophoresis retards repeating DNA in unmodified and hydroxyethylated agarose gels. *Phys. Rev. E: Stat. Phys., Plasmas, Fluids, Relat. Interdiscip. Top.*, 54 (1996) 6697-6707; C.A., 126 (1997) 141640r.
- 2367 Alon, U. and Mukamel, D.: Gel electrophoresis and diffusion of ring-shaped DNA. *Phys. Rev. E: Stat. Phys., Plasmas, Fluids, Relat. Interdiscip. Top.*, 55 (1997) 1783-1793; C.A., 126 (1997) 222504b.
- 2368 Bukenberger, M., Horn, J., Dingermann, T., Dottin, R.P. and Winckler, T.: Molecular cloning of a cDNA encoding the nucleosome core histone H3 from *Dictyostelium discoideum* by genetic screening in yeast. *Biochim. Biophys. Acta*, 1352 (1997) 85-90.
- 2369 Burbidge, S.A., Webber, P.M. and Jones, E.A.: Isolation of a *Xenopus laevis* genomic clone representing a novel N-cadherin related gene. *Biochim. Biophys. Acta*, 1356 (1997) 253-257.
- 2370 Busch, S.: Cloning and sequencing of the cDNA encoding for a Na^+/H^+ exchanger from *Xenopus laevis* oocytes (X1-NHE). *Biochim. Biophys. Acta*, 1325 (1997) 13-16.
- 2371 Chen, M. and Christen, P.: Removal of chromosomal DNA by Mg^{2+} in the lysis buffer: an improved lysis protocol for preparing *Escherichia coli* whole-cell lysates for sodium dodecyl sulfate-polyacrylamide gel electrophoresis. *Anal. Biochem.*, 246 (1997) 263-264.
- 2372 Ciesielska, E. and Szmigiero, L.: A rapid method of agarose gel electrophoresis for separation of different conformational forms of DNA. *Cell. Mol. Biol. Lett.*, 1 (1996) 373-376; C.A., 126 (1997) 141645w.

- 2373 Clark, S.M. and Mathies, R.A.: Multiplex dsDNA fragment sizing using dimeric intercalation dyes and capillary array electrophoresis: ionic effects on the stability and electrophoretic mobility of DNA-dye complexes. *Anal. Chem.*, 69 (1997) 1355-1363.
- 2374 Cremonesi, L., Firpo, S., Ferrari, M., Righetti, P.G. and Gelfi, C.: Double-gradient DGGE for optimized detection of DNA point mutations. *BioTechniques*, 22 (1997) 326-330; C.A., 126 (1997) 166974r.
- 2375 Espéret, C., Starck, J., Godet, J. and Morlé, F.: Coactivation of human $\alpha 1$ - and $\alpha 2$ -globin genes in single induced MEL cells containing one human α -globin locus. *Biochim. Biophys. Acta*, 1352 (1997) 27-32.
- 2376 Eubanks, A.C., Roeder, M.J., Pirtle, I.L. and Pirtle, R.M.: Structural analysis of a bovine arginine tRNA_{CCG} gene. *Biochim. Biophys. Acta*, 1352 (1997) 138-144.
- 2377 Fiedler, H.R., Schlesinger, J., Strotmann, H., Shavit, N. and Leu, S.: Characterization of atpA and atpB deletion mutants produced in *Chlamydomonas reinhardtii* cw15: electron transport and photophosphorylation activities of isolated thylakoids. *Biochim. Biophys. Acta*, 1319 (1997) 109-118.
- 2378 Gissel-fält, K., Åkerman, B. and Jonsson, M.: Effects of local changes in the helix flexibility on electrophoretic migration of DNA in agarose gel. *Electrophoresis (Weinheim)*, 18 (1997) 663-674.
- 2379 Gonzalgo, M.L., Liang, G., Spruck C.H., III, Zingg, J.-M., Rideout, W.M., III and Jones, P.A.: Identification and characterization of differentially methylated regions of genomic DNA by methylation-sensitive arbitrarily primed PCR. *Cancer Res.*, 57 (1997) 594-599.
- 2380 Hammond, R.W., Oana, H., Schwinefus, J.J., Bonadio, J., Levy, R.J. and Morris, M.D.: Capillary electrophoresis of supercoiled and linear DNA in dilute hydroxyethyl cellulose solution. *Anal. Chem.*, 69 (1997) 1192-1196.
- 2381 Hu, Q. and Henney, H.R., Jr.: An *Acanthamoeba* polyubiquitin gene and application of its promoter to the establishment of a transient transfection system. *Biochim. Biophys. Acta*, 1351 (1997) 126-136.
- 2382 Hughes, C.M., Lewis, S.E.M., McKelvey-Martin, V.J. and Thompson, W.: Reproducibility of human sperm DNA measurements using the alkaline single cell gel electrophoresis assay. *Mutat. Res.*, 374 (1997) 261-268; C.A., 126 (1997) 247202q.
- 2383 Joloszynski, P., Kujawski, M. and Szyfter, K.: (Single cell gel electrophoresis - a useful technique for DNA damage studies). *Postepy Biol. Komorki*, 23 (1996) 339-354; C.A., 126 (1997) 44564m.
- 2384 Jürgens, B., Schnitz-Dräger, B.J. and Schultz, W.A.: Hypomethylation of L1 LINE sequences prevailing in human urothelial carcinoma. *Cancer Res.*, 56 (1996) 5698-5703.
- 2385 Kano, A., Watanabe, Y., Takeda, N., Aizawa, S.-i. and Akaike, T.: Analysis of IFN- γ -induced cell cycle arrest and cell death in hepatocytes. *J. Biochem. (Tokyo)*, 121 (1997) 677-683.
- 2386 Kim, S.H., Chi, J.G., Reith, A. and Kadenbach, B.: Quantitative analysis of mitochondrial DNA deletion in paraffin embedded muscle tissues from patients with KSS and CPEO. *Biochim. Biophys. Acta*, 1360 (1997) 193-195.
- 2387 Klug, J.: Ku autoantigen is a potential major cause of nonspecific bands in electrophoretic mobility shift assays. *BioTechniques*, 22 (1997) 212-216; C.A., 126 (1997) 222490u.
- 2388 Lim, J., Chang, J.-L. and Tsai, H.-J.: A second type of rod opsin cDNA from the common carp (*Cyprinus carpio*). *Biochim. Biophys. Acta*, 1352 (1997) 8-12.
- 2389 Longo, J.A., Nevaldine, B., Longo, S.L., Winfield, J.A. and Hahn, P.J.: An assay for quantifying DNA-double-strand break repair that is suitable for small numbers of unlabeled cells. *Radiat. Res.*, 147 (1997) 35-40; C.A., 126 (1997) 154461h.
- 2390 Luo, Y. and Kessel, D.: Detection of early and late stage apoptosis with field inversion gel electrophoresis. *BioTechniques*, 21 (1996) 812-816; C.A., 126 (1997) 72220q.
- 2391 Matitashvili, E. and Zavizion, B.: One-tube extraction of DNA and RNA from agarose gel. *Anal. Biochem.*, 246 (1997) 260-252.
- 2392 Matsumoto, I., Emori, Y., Abe, K. and Arai, S.: Characterization of a gene family encoding cysteine proteinases of *Sitophilus zeamais* (maize weevil), and analysis of the protein distribution in various tissues including alimentary tract and germ cells. *J. Biochem. (Tokyo)*, 121 (1997) 464-476.
- 2393 McHugh, M.M., Beerman, T.A. and Burhans, W.C.: DNA-damaging enediyne C-1027 inhibits initiation of intracellular SV40 DNA replication in trans. *Biochemistry*, 36 (1997) 1003-1009.
- 2394 Miyoshi, R., Inoue, H., Baba, Y. and Tsuhako, M.: (Analysis of DNA by capillary electrophoresis equipped with fluorescence detection). *Kuromatogurafi*, 17 (1996) 338-339; C.A., 126 (1997) 127457e.
- 2395 Phoenix, P., Raymond, M.-A., Massé, É. and Drolet, M.: Roles of DNA topoisomerases in the regulation of R-loop formation *in vitro*. *J. Biol. Chem.*, 272 (1997) 1473-1479.
- 2396 Ribbons, K.A., Currie, M.G., Connor, J.R., Manning, P.T., Allen, P.C., Didier, P., Ratterree, M.S., Clark, D.A. and Miller, M.J.S.: The effect of inhibitors of inducible nitric oxide synthase on chronic colitis in the rhesus monkey. *J. Pharmacol. Exp. Ther.*, 280 (1997) 1008-1015.
- 2397 Schylechte, H.H., Schnorr, D., Loening, T., Rudolph, B.D., Pohrt, U.M. and Loening, S.A.: Mutation of the tumor suppressor gene p53 in human prostate and bladder cancers-investigation by temperature gradient gel electrophoresis (TGGE). *J. Urol. (Baltimore)*, 157 (1997) 1049-1053; C.A., 126 (1997) 197047v.
- 2398 Shi, Z.-Y., Liu, P.Y.-F., Lau, Y.-J., Lin, Y.-H., Hu, B.-S. and Tsai, H.-N.: Comparison of polymerase chain reaction and pulsed-field gel electrophoresis for the epidemiological typing of *Campylobacter jejuni*. *Diagn. Microbiol. Infect. Dis.*, 26 (1996) 103-108; C.A., 126 (1997) 274476p.
- 2399 Song, P. and Allen, R.D.: Identification of a cotton fiber-specific acyl carrier protein cDNA by differential display. *Biochim. Biophys. Acta*, 1351 (1997) 305-312.
- 2400 Suzuki, K., Okada, K., Kamiya, Y., Zhu, X.F., Nakagawa, T., Kawamukai, M. and Matsuda, H.: Analysis of the decaprenyl diphosphate synthase (dps) gene in fission yeast suggests a role of ubiquinone as an antioxidant. *J. Biochem. (Tokyo)*, 121 (1997) 496-505.
- 2401 Tamura, N., Takahashi, H., Takeba, G., Satoi, T. and Nakagawa, H.: The nitrate reductase gene isolated from DNA of cultured spinach cells. *Biochim. Biophys. Acta*, 1338 (1997) 151-155.
- 2402 Torani-Lehoczki, J. and Dlauchy, D.: An opportunity to distinguish species of *Saccharomyces sensu stricto* by electrophoretic separation of the larger chromatosomes. *Lett. Appl. Microbiol.*, 23 (1996) 227-230; C.A., 126 (1997) 16405s.

2403 Watanabe, M.: (Recovery of nucleic acid and nucleic acid recovery tip). *Jpn. Kokai Tokkyo Koho JP 08,327,595 [96,327,595]* (Cl. GO1N27/447), 13 Dec. 1996, Appl. 95/152,401, 26 May 1995; 7 pp.; C.A., 126 (1997) 141738d.

2404 Yamamoto, K., Konami, Y. and Irimura, T.: Sialic acid-binding motif of *Maackia amurensis* lectins. *J. Biochem. (Tokyo)*, 121 (1997) 756-761.

2405 Zheng, J.Y., Koda, T., Arimura, Y., Kishi, M. and Kakinuma, M.: Structure and expression of the mouse S10 gene. *Biochim. Biophys. Acta*, 1351 (1997) 47-50.

See also 1755, 2027, 2233, 2240, 2258, 2282, 2317, 2351, 2355, 2417, 2464, 2542.

21d. Structural studies on RNA and RNA mapping

2406 Boulme, F., Perälä-Heape, M., Sarah-Cottin, L. and Litvak, S.: Specific inhibition of *in vitro* reverse transcription using anti-sense oligonucleotides targeted to the TAR regions of HIV-1 and HIV-2. *Biochim. Biophys. Acta*, 1351 (1997) 249-255.

2407 Hagemann, G.E., Katsiou, E., Forkl, H., Steindorf, A.C.J. and Tadros, M.H.: Gene cloning and regulation of gene expression of the puc operon from *Rhodovulum sulfidophilum*. *Biochim. Biophys. Acta*, 1351 (1997) 341-358.

2408 Melander, Y., Holmberg, L. and Nygård, O.: Structure of 18 S ribosomal RNA in native 40 S ribosomal subunits. *J. Biol. Chem.*, 272 (1997) 3254-3258.

2409 Ronimus, R.S. and Musgrave, D.R.: Identification of a gene in the euryarchaeal *Thermococcus* species AN1 encoding a protein homologous to the alpha subunit of the eukaryal signal recognition particle (SRP) receptor. *Biochim. Biophys. Acta*, 1351 (1997) 1-8.

See also 2403, 2424, 2547.

21e. Structural studies on DNA and DNA mapping

2410 Abdalla, S.: Genomic DNA fingerprinting by pulsed-field gel electrophoresis as an epidemiological marker for nosocomial bacterial infections. *Al-Azhar J. Microbiol.*, 32 (1996) 41-61; C.A., 126 (1997) 141648z.

2411 Alonso, A., Martin, P., Albaran, C., Aguilera, B., Garcia, O., Guzman, A., Oliva, H. and Sancho, M.: Detection of somatic mutations in the mitochondrial DNA control region of colorectal and gastric tumors by heteroduplex and single-strand conformation analysis. *Electrophoresis (Weinheim)*, 18 (1997) 682-685.

2412 Andreassen, R. and Olaisen, B.: Length and sequence variation in D7S22 (g3) alleles studied by high resolution length measurements and nucleotide sequencing. *Electrophoresis (Weinheim)*, 18 (1997) 675-681.

2413 Aono, K., Yamada, Y., Nakajima, M., Iwase, H., Iwadate, K., Nagao, M. and Takatori, T.: The use of capillary gel electrophoresis for the typing of VNTR DNA loci. *Hanraigaku Zasshi*, 63 (1997) 1-6; C.A., 126 (1997) 273341d.

2414 Bachmann, M., Grötz, D., Bartsch, H., Klein, R.R. and Tröster, H.: Analysis of expression of an alternative La (SS-B) cDNA and localization of the encoded N- and C-terminal peptides. *Biochim. Biophys. Acta*, 1356 (1997) 53-63.

2415 Bai, F. and Jia, J.: (The significance of electrophoretic karyotypes in classification of *Candida krusei* and related species). *Weishengwu Xuebao*, 36 (1996) 329-334; C.A., 126 (1997) 129064y.

2416 Barragan-Gonzalez, E., Lopez-Guerrero, J.A., Bolufer-Gilabert, P., Sanz-Alonso, M., de la Rubia-Corcos, J. and Sempere-Talens, A.: The type of reverse transcriptase affects the sensitivity of some reverse transcription PCR methods. *Clin. Chim. Acta*, 260 (1997) 73-83.

2417 Barrett, P., Conway, S., Jockers, R., Strosberg, A.D., Guardiola-Lemaitre, B., Delagrange, P. and Morgan, P.J.: Cloning and functional analysis of a polymorphic variant of the ovine Me1 1a melatonin receptor. *Biochim. Biophys. Acta*, 1356 (1997) 299-307.

2418 Caetano-Anolles, G. and Trigiano, R.N.: Recovery of DNA amplification product from silver-stained polyacrylamide gels: applications in nucleic acid finger-printing and genetic mapping. *Methods Mol. Biol. (Totowa)*, 67 (1997) 111-127; C.A., 126 (1997) 70802g.

2419 Cohen, S., Regev, A. and Lavi, S.: Small polydispersed circular DNA (spcDNA) in human cells: association with genomic instability. *Oncogene*, 14 (1997) 977-985; C.A., 126 (1997) 274361x.

2420 Drouin, R., Gao, S. and Holmquist, G.P.: Agarose gel electrophoresis for DNA damage analysis. In: Pfeifer, G.P. (Editor), *Technol. Detect DNA Damage Mutat.*, Plenum, New York, 1996, pp. 37-43; C.A., 126 (1997) 16406t.

2421 Ganguly, A. and Williams, C.: Detection of mutations in multi-exon genes: comparison of conformation sensitive gel electrophoresis and sequencing strategies with respect to cost and time for finding mutations. *Hum. Mutat.*, 9 (1997) 339-343; C.A., 126 (1997) 272911c.

2422 Gelfi, C., Righetti, P.G., Travi, M. and Fattore, S.: Temperature-programmed capillary electrophoresis for the analysis of high-melting point mutants in thalassemias. *Electrophoresis (Weinheim)*, 18 (1997) 724-731.

2423 Giannattasio, S., Lattanzio, P., Bobba, A. and Marra, E.: Detection of microsatellites by ethidium bromide staining. The analysis of an STR system in the human phenylalanine hydroxylase gene. *Mol. Cell. Probes*, 11 (1997) 81-83; C.A., 126 (1997) 247210r.

2424 Green, R.J., Chi, V., Gilchrist, R.D., Dee, G. and Stevens, J.K.: Nucleic acid sequence determination and mutant or disease-related gene detection using electrophoresis fragment pattern and algorithmic determination of normalization coefficient. *PCT Int. Appl. WO 97 02,488 (Cl. GO1N27/447)*, 23 Jan. 1997, US Appl. 497,202, 30 Jun. 1995; 42 pp.; C.A., 126 (1997) 167472n.

2425 Gurrieri, S., Smith, S.B., Wells, K.S., Johnson, I.D. and Bustamante, C.: Real-time imaging of the reorientation mechanisms of YoYo-labeled DNA molecules during 90° and 120° pulsed field gel electrophoresis. *Nucleic Acids Res.*, 24 (1996) 4759-4767; C.A., 126 (1997) 128908q.

2426 Hanekamp, J.S., Andre, P., Coller, H.A., Li, X.-C., Thilly, W.G. and Khrapko, K.: CDCE: constant denaturant capillary electrophoresis for detection and enrichment of sequence variants. In: Landegren, U. (Editor), *Lab. Protoc. Nutat. Detect.*, Oxford University Press, Oxford, 1996, pp. 38-41; C.A., 126 (1997) 128912m.

- 2427 Hidaka, K., Iuchi, I., Yamasaki, T., Ueda, N. and Hukano, K.: Nonsense mutation in exon 2 of the butyrylcholinesterase gene: a case of familial cholinesterasemia. *Clin. Chim. Acta*, 261 (1997) 27-34.
- 2428 Higgy, N.A., Tarnasky, H.A., Valarché, I., Nepveu, A. and van der Hoorn, F.A.: Cux/CDP homeodomain protein binds to an enhancer in the rat c-mos locus and represses its activity. *Biochim. Biophys. Acta*, 1351 (1997) 313-324.
- 2429 Hirawake, H., Kita, K. and Sharma, Y.D.: Variations in the C-terminal repeats of the knob-associated histidine-rich protein of *Plasmodium falciparum*. *Biochim. Biophys. Acta*, 1360 (1997) 105-108.
- 2430 Humphries, S.E., Gudnason, V., Whittall, R. and Day, I.N.M.: Single-strand conformation polymorphism analysis with high throughput modifications, and its use in mutation detection in familial hypercholesterolemia. *Clin. Chem. (Washington)*, 43 (1997) 427-435.
- 2431 Isemura, S. and Saitoh, E.: Nucleotide sequence of gene PBI encoding a protein homologous to salivary proline-rich protein P-B. *J. Biochem. (Tokyo)*, 121 (1997) 1025-1030.
- 2432 Kanazawa, M., Terada, K., Kato, S. and Mori, M.: HSDJ, a human homolog of DnaJ, is farnesylated and is involved in protein import into mitochondria. *J. Biochem. (Tokyo)*, 121 (1997) 890-895.
- 2433 Kaneta, T., Okamoto, T. and Isamaka, T.: Detection of a specific DNA fragment by freeresolution capillary electrophoresis using a fluorescent DNA probe measured by semiconductor laser-induced fluorometry. *Anal. Sci.*, 12 (1996) 875-880; C.A., 126 (1997) 43234s.
- 2434 Komori, K., Kuroe, K., Yanagisawa, K. and Tanaka, Y.: Cloning and characterization of the gene encoding a mitochondrial localized DNA topoisomerase II in *Dictyostelium discoideum*. Western blot analysis. *Biochim. Biophys. Acta*, 1352 (1997) 63-72.
- 2435 Kuromizu, K., Abe, O., Araki, T., Kakuda, F. and Kodera, Y.: A method for qualitative analysis of neocarzinostatin-mediated DNA-strand cleavage. *Shizen to Bunka (Fukuoka)*, 24 (1997) 87-100; C.A., 126 (1997) 271922v.
- 2436 Liu, J., Wang, Y., Gu, P., Patrick, J., Crist, K.A., Sabourin, C.L.K., Stoner, G.D., Mitchell, M.F., Fanning, J.D., Kim, K., Goldblatt, P.J., Kelloff, G.J., Boone, C.W. and You, M.: Detection of genomic alterations in human cervical cancer by two-dimensional gel electrophoresis. *J. Cell. Biochem.*, (Suppl. 25) (1996) 41-48; C.A., 126 (1997) 140295v.
- 2437 Markoff, A., Savov, A., Vladimirov, V., Bogdanova, N., Kremensky, I. and Ganev, V.: Optimization of single-strand conformation polymorphism analysis in the presence of polyethylene glycol. *Clin. Chem. (Washington)*, 43 (1997) 30-33.
- 2438 Meyer, G. and Rueggeberg, H.: (DNA fragment separation, polymer-coupled sequence-specific oligonucleotide probes, and gel electrophoresis for analysis of biodiversity of organisms, viruses, plasmids and genes). *Eur. Pat. Appl. EP 750,047 (Cl. C12Q1/68)*, 27 Dec. 1996, Appl. 95/109,488, 20 Jun. 1995; 8 pp.; C.A., 126 (1997) 140554d.
- 2439 Miao, J.-Y., Kaji, K., Hayashi, H. and Araki, S.: Inhibitors of phospholipase promote apoptosis of human endothelial cells. *J. Biochem. (Tokyo)*, 121 (1997) 612-618.
- 2440 Michiels, L., Francois, B., Raus, J. and Vandevyver, C.: Rapid identification of PKU-associated mutations by multiplex DGGE analysis of the PAH gene. *J. Inherited Metab. Dis.*, 19 (1996) 735-738; C.A., 126 (1997) 70859f.
- 2441 Murdaugh, S.E. and Lerman, L.S.: DGGE: denaturing gradient gel electrophoresis and related techniques. In: Landergren, U. (Editor), *Lab. Protoc. Mutat. Detec.*, Oxford University Press, Oxford, 1996, pp. 33-37; C.A., 126 (1997) 128911k.
- 2442 Nittoh, T., Hirakata, M., Mue, S. and Ohuchi, K.: Identification of cDNA encoding rat eosinophil cationic protein/eosinophil-associated ribonuclease. *Biochim. Biophys. Acta*, 1351 (1997) 42-46.
- 2443 Owens, C.V., Davidson, Y.Y., Kar, S. and Soper, S.A.: High-resolution separation of DNA restriction fragments using capillary electrophoresis with near-IR, diode-based, laser-induced fluorescence detection. *Anal. Chem.*, 69 (1997) 1256-1261.
- 2444 Palm, A. and Hjerten, S.: The resolution of DNA fragments in capillary electrophoresis in replaceable agarose gels. *J. Capillary Electrophor.*, 3 (1996) 173-179; C.A., 126 (1997) 274371a.
- 2445 Peck, K., Wung, S.-L., Chang, G.-S., Yen, J.J.Y. and Hsieh, Y.-Z.: Restriction mapping of genes by capillary electrophoresis with laser-induced fluorescence detection. *Anal. Chem.*, 69 (1997) 1380-1384.
- 2446 Renders, N., Romling, U., Verbrugh, H. and van Belkum, A.: Comparative typing of *Pseudomonas aeruginosa* by random amplification of polymorphic DNA or pulse-field gel electrophoresis of DNA macrorestriction fragments. *J. Clin. Microbiol.*, 34 (1996) 3190-3195; C.A., 126 (1997) 70786e.
- 2447 Righetti, P.G. and Geffl, C.: Recent advances in capillary electrophoresis of DNA fragments and PCR products. *Biochem. Soc. Trans.*, 25 (1997) 267-273 C.A., 126 (1997) 247143w - a review with 46 refs.
- 2448 Schmitt, C. and Benecke, M.: Five cases of forensic short tandem repeat DNA typing. *Electrophoresis (Weinheim)*, 18 (1997) 690-694.
- 2449 Siegelman, M., Mohabeer, A., Fajey, T.J., III, Tomlinson, G., Mayambala, C., Jafari, S., Noll, W.W., Thibodeau, S.N. and Dawson, D.B.: Rapid, nonradioactive screening for mutations in exons 10, 11, and 16 of the RET protooncogene associated with inherited medullary thyroid carcinoma. *Clin. Chem. (Washington)*, 43 (1997) 453-457.
- 2450 Stebbins, M.A., Davis, J.B., Clark, B.K. and Sepaniak, M.J.: Optimization of separation conditions in the size-selective capillary electrophoretic separation of DNA fragments. *J. Microcolumn Sep.*, 8 (1996) 485-494; C.A., 126 (1997) 101355v.
- 2451 Swerdlow, H., Jones, B.J. and Wittwer, C.T.: Fully automated DNA reaction and analysis in a fluidic capillary instrument. *Anal. Chem.*, 69 (1997) 848-855.
- 2452 Tabata, K., Kashiwagi, S., Mori, H., Ueguchi, C. and Mizuno, T.: Cloning of a cDNA encoding a putative metal-transporting P-type ATPase from *Arabidopsis thaliana*. *Biochim. Biophys. Acta*, 1326 (1997) 1-6.
- 2453 Tanaka, T., Muto, N., Ido, Y., Itoh, N. and Tanaka, K.: Induction of embryonal carcinoma cell differentiation by deferoxamine, a potent therapeutic iron chelator. *Biochim. Biophys. Acta*, 1357 (1997) 91-97.
- 2454 Toda, H., Takeuchi, T., Hori, N., Ito, K. and Sato, K.: Inverted repeats in the TATA-less promoter of the rat catalase gene. *J. Biochem. (Tokyo)*, 121 (1997) 1035-1040.

- 2455 Türkmen, B., Schmitt, M., Schmalfeldt, B., Trommler, P., Hell, W., Creutzburg, S., Graeff, H. and Magdolen, V.: Mutational analysis of the genes encoding urokinase-type plasminogen activator (uPA) and its inhibitor PAI-1 in advanced ovarian cancer. *Electrophoresis (Weinheim)*, 18 (1997) 686-689.
- 2456 Ulvik, A., Refsum, H., Kluijtmans, L.A.J. and Ueland, P.M.: C677T Mutation of methylenetetrahydrofolate reductase gene determined in blood or plasma by multiple-injection capillary electrophoresis and laser-induced fluorescence detection. *Clin. Chem. (Washington)*, 43 (1997) 267-272.
- 2457 Vijg, J. and Li, D.: Diagnostic detection of mutation using a combination of multiplex PCR and two-dimensional gel electrophoresis of amplification products. *PCT Int. Appl. WO 96 39,535 (Cl. C12Q1/68)*, 12 Dec. 1996, US Appl. 471,249, 6 Jun. 1995, 36 p.; C.A., 126 (1997) 100254z.
- 2458 Wimmer, K., Thoraval, D., Kuick, R., Lamb, B.J. and Hanash, S.M.: Identification of amplifications, deletions and methylation changes in cancer by means of two-dimensional analysis of genomic digests: application to neuroblastoma. *Biochem. Soc. Trans.*, 25 (1997) 262-267; C.A., 126 (1997) 247235c.
- 2459 Wölfel, S., Wittig, B., Dorbic, T. and Rich, A.: Identification of processes that influence negative supercoiling in the human c-myc gene. *Biochim. Biophys. Acta*, 1352 (1997) 213-221.
- 2460 Wong, J.Y.M., Harrop, S.A., Day, S.R. and Brindley, P.J.: Schistosomes express two forms of cathepsin D. *Biochim. Biophys. Acta*, 1338 (1997) 156-160.
- 2461 Yamada, T., Tobita, K., Osada, S., Nishihara, T. and Imagawa, M.: CCAAT/Enhancer-binding protein δ gene expression is mediated by APRF/STAT3. *J. Biochem. (Tokyo)*, 121 (1997) 731-738.
- 2462 Yamasaki, S., Nair, G.B., Bhattacharya, S.K., Yamamoto, S., Kurazono, H. and Takeda, Y.: Cryptic appearance of a new clone of *Vibrio cholerae* serogroup O1 biotype E1 Tor in Calcutta, India. *Microbiol. Immunol.*, 41 (1997) 1-6; C.A., 126 (1997) 274652t.
- 2463 Zhang, N. and Yeung, E.S.: Simultaneous separation and genetic typing of four short tandem repeat loci by capillary electrophoresis. *J. Chromatogr. A*, 768 (1997) 135-141.
- 2464 Zheng, H., Bhavsar, D., Dugast, I., Zappone, E. and Drysdale, J.: Conserved mutations in human ferritin H pseudogenes: a second functional sequence or an evolutionary quirk? *Biochim. Biophys. Acta*, 1351 (1997) 150-156.
- 2465 Zhou, P.K., Hendry, J.H. and Margison, G.P.: Comparative measurements of radiation-induced DNA double-standard breaks by graded voltage and pulsed-field gel electrophoresis. *Int. J. Radiat. Biol.*, 71 (1997) 95-100; C.A., 126 (1997) 196855v.
- See also 2287, 2369, 2373, 2394, 2406, 2543, 2544, 2546, 2548, 2549, 2550, 2551, 2552, 2553, 2564, 2569.
- 21f. Complex mixtures of nucleic acids and their fragments
- 2466 Bulygin, K.N., Matasova, N.B., Graifer, D.M., Venyaminova, A.G., Yamkovoy, V.I., Stahl, J. and Karpova, G.G.: Protein environment of mRNA at the decoding site of 80S ribosomes from human placenta as revealed from affinity labeling with mRNA analogs - derivatives of oligoribonucleotides. *Biochim. Biophys. Acta*, 1351 (1997) 325-332.
- 2467 Eastman, S.J., Siegel, C., Tousignant, J., Smith, A.E., Cheng, S.H. and Scheule, R.K.: Biophysical characterization of cationic lipid:DNA complexes. *Biochim. Biophys. Acta*, 1325 (1997) 41-62.
- 2468 Landegren, U. and Lagerkvist, A.: Nucleic acid mismatch detection by hybridization with immobilized reference nucleic acid and resolvas-catalyzed cleavage on solid support followed by slot gel electrophoresis. *PCT Int. Appl. WO 96 35,809 (Cl. C12Q1/68)*, 14 Nov. 1996, US Appl. 439,866, 11 May 1995; 33 p.; C.A., 126 (1997) 43602k.
- 2469 Lewis, S.E. and Konradi, C.: Analysis of DNA-protein interactions in the nervous system using the electrophoretic mobility shift assay. *Methods (San Diego)*, 10 (1996) 303-311; C.A., 126 (1997) 15216u.
- 2470 Musarrat, J., Arezina-Wilson, J., Venkatachalam, S. and Wani, A.A.: Repair analysis of promutagenic (+)-anti-BPDE DNA adduct in transcriptionally active sequences of plasmid DNA in *Escherichia coli*. *Biochim. Biophys. Acta*, 1351 (1997) 203-212.
- 2471 Shadle, S.E., Allen, D.F., Guo, H., Pogozelski, W.K., Bashkin, J.S. and Tullius T.D.: Quantitative analysis of electrophoresis data: novel curve fitting methodology and its application to the determination of a protein-DNA binding constant. *Nucleic Acids Res.*, 25 (1997) 850-860; C.A., 126 (1997) 248479x.
- 2472 Zamzow, D., Small, G.J. and Jankowiak, R.: Capillary electrophoresis-fluorescence line-narrowing (CE-FLN) system for DNA adduct characterization. *Mol. Cryst. Liq. Cryst. Sci. Technol., Sect A*, 291 (1996) 155-162; C.A., 126 (1997) 247603w.
- See also 2428.
22. ALKALOIDS
- 2473 Aboul-Enein, H.Y. and Bakr, S.A.: Simultaneous determination of caffeine and ergotamine in pharmaceutical dosage formulation by capillary electrophoresis. *J. Liq. Chromatogr. Relat. Technol.*, 20 (1997) 47-55.
- 2474 Sun, S.-W., Lee, S.-S., Chen, L.-Y. and Chen, C.-K.: Separation of aporphine alkaloids by micellar electrokinetic chromatography. *J. Chromatogr. A*, 767 (1997) 277-284.
- 2475 Unger, M., Stöckigt, D., Belder, D. and Stöckigt, J.: General approach for the analysis of various alkaloid classes using capillary electrophoresis and capillary electrophoresis-mass spectrometry. *J. Chromatogr. A*, 767 (1997) 263-276.
- 2476 Zhang, C.-X. and Thormann, W.: Separation of free and glucuronidated opioids by capillary electrophoresis in aqueous, binary and micellar media. *J. Chromatogr. A*, 764 (1997) 157-168.
- See also 2541.

23. OTHER SUBSTANCES CONTAINING HETEROCYCLIC NITROGEN

23e. Other *N*-heterocyclic compounds

- 2477 Olsson, J.C., Dyremark, A. and Karlberg, B.: Determination of heterocyclic aromatic amines by micellar electrokinetic chromatography with amperometric detection. *J. Chromatogr. A*, 765 (1997) 329-335.
- 2478 Pacakova, V., Stulik, K., Vlasakova, V. and Brezinova, A.: Capillary electrophoresis of cytokinins and cytokinin ribosides. *J. Chromatogr. A*, 764 (1997) 331-335.
- 2479 Tran, T.C., Huq, T.A., Kantes, H.L., Crane, J.N. and Strein, T.G.: Determination of creatinine and other uremic toxins in human blood sera with micellar electrokinetic capillary electrophoresis. *J. Chromatogr. B*, 690 (1997) 35-42.

See also 1941.

24. ORGANIC SULPHUR COMPOUNDS (INCL. GLUCOSINOLATES)

- 2480 Boden, J., Feige, K. and Meyer, B.: Purity testing of sulfonic acids of different chain length by capillary electrophoresis. *Chromatographia*, 45 (1997) 116-120.
- 2481 Guimaraes, M.A.M. and Mourao, P.A.S.: Urinary excretion of sulfated polysaccharides administered to Wistar rats suggests a renal permselectivity to these polymers based on molecular size. *Biochim. Biophys. Acta*, 1335 (1997) 161-172.
- 2482 Lee, A.W.M., Chan, W.F., Yuen, F.S.Y., Lo, C.H., Chan, R.C.K. and Liang, Y.: Simultaneous determination of dithiocarbamates by capillary electrophoresis with diode array detection and using factor analysis. *Anal. Chim. Acta*, 339 (1997) 123-129.
- 2483 Motellier, S., Gurdale, K. and Pitsch, H.: Sulfur speciation by capillary electrophoresis with indirect spectrophotometric detection: in search of a suitable carrier electrolyte to maximize sensitivity. *J. Chromatogr. A*, 770 (1997) 311-319.

See also 2591.

25. ORGANIC PHOSPHORUS COMPOUNDS (INCL. SUGAR PHOSPHATES)

- 2484 Shen, P., Hauri, D., Ross, J. and Oefner, P.J.: Analysis of glycolysis metabolites by capillary zone electrophoresis with indirect UV detection. *J. Capillary Electrophor.*, 3 (1996) 155-163; *C.A.*, 126 (1997) 274370z.

See also 1811, 1965, 2307, 2593.

26. ORGANOMETALLIC AND RELATED COMPOUNDS

26a. Organometallic compounds

See 2575.

26c. Coordination compounds

- 2485 Aguilar, M., Farran, A. and Marti, V.: Determination of metal cyanide complexes in gold processing solutions by capillary electrophoresis. *J. Chromatogr. A*, 767 (1997) 319-324.
- 2486 Kuban, P., Buchberger, W. and Haddad, P.R.: Determination of metallo-cyanides by capillary electrophoresis after concentration on supported liquid membranes. *J. Chromatogr. A*, 770 (1997) 329-336.
- 2487 Lederer, M., Leipzig-Pagani, E., Lumini, T. and Roulet, R.: Synthesis of rhodium(III)-pyridine complexes: an electrophoretic and chromatographic study. *J. Chromatogr. A*, 769 (1997) 325-332.

See also 2587.

28. ANTIBIOTICS

- 2488 Castaneda Penalvo, G., Kelly, M., Maillols, H. and Fabre, H.: Evaluation of capillary zone electrophoresis and micellar electrokinetic capillary chromatography with direct injection of plasma for the determination of cefotaxime and its metabolite. *Anal. Chem.*, 69 (1997) 1364-1369.
- 2489 LeTourneau, D.L. and Allen, N.E.: Use of capillary electrophoresis to measure dimerization of glycopeptide antibiotics. *Anal. Biochem.*, 246 (1997) 62-66.
- 2490 Li, Y.M., van Schepdael, A., Roets, E. and Hoogmartens, J.: Separation of oxytetracycline and its related substances by capillary electrophoresis. *J. Liq. Chromatogr. Relat. Technol.*, 20 (1997) 273-282.
- 2491 Mrestani, Y., Neubert, R., Schiewe, J. and Härtl, A.: Application of capillary zone electrophoresis in cephalosporin analysis. *J. Chromatogr. B*, 690 (1997) 321-326.

See also 2504.

29. INSECTICIDES, PESTICIDES AND OTHER AGROCHEMICALS

29e. Herbicides

- 2492 Kryniotsky, A.J.: Determination of sulfonylurea herbicides in water by capillary electrophoresis and by liquid chromatography/mass spectrometry. *J. Assoc. Off. Anal. Chem.*, 80 (1997) 392-400.
- 2493 Mechref, Y. and El Rassi, Z.: Capillary electrophoresis of herbicides. III. Evaluation of octylmaltoxyinoside chiral surfactant in the enantiomeric separation of phenoxy acid herbicides. *Chirality*, 8 (1996) 518-524; *C.A.*, 126 (1997) 43917s.
- 2494 Penmetsa, K.V., Leidy, R.B. and Shea, D.: Analysis of primisulfuron and triasulfuron in water and soil samples by micellar electrokinetic capillary chromatography. *J. Chromatogr. A*, 766 (1997) 225-231.
- 2495 Spagone, C., D'Orazio, C., Rossi, M. and Rotilio, D.: Separation of chlorophenoxy acid herbicides by capillary zone electrophoresis. *J. High Resolut. Chromatogr.*, 19 (1996) 647-650.

30. SYNTHETIC AND NATURAL DYES

30a. Synthetic dyes

2496 Schofield, J. and Asaf, M.: Analysis of sulphonated phthalocyanine dyes by capillary electrophoresis. *J. Chromatogr. A*, 770 (1997) 345-348.

30b. Chloroplast and other natural pigments

2497 Ciavatta, C., Govi, M. and Gessa, C.: Investigation of fulvic acids from peat using capillary electrophoresis (CE). *J. High Resolut. Chromatogr.*, 20 (1997) 67-71.
 2498 Erk, M., Musani, L. and Raspor, B.: The interactions of ^{54}Mn with humic substances of freshwater sediment origin. *J. Environ. Radioact.*, 35 (1997) 203-219; *C.A.*, 126 (1997) 282360m.
 2499 Trubetskoy, O.A., Trubetskaya, O.E., Afanaseva, G.V., Reznikova, O.I. and Saiz-Jimenez, C.: Polyacrylamide gel electrophoresis of soil humic acid fractionated by size-exclusion chromatography and ultrafiltration. *J. Chromatogr. A*, 767 (1997) 285-292.

See also 2066, 2072, 2144.

31. PLASTICS AND THEIR INTERMEDIATES

2500 Gao, J.Y., Dubin, P.L., Sato, T. and Morishima, Y.: Separation of polyelectrolytes of variable compositions by free-zone capillary electrophoresis. *J. Chromatogr. A*, 766 (1997) 233-236.

32. DRUG ANALYSIS

32a. Drug analysis, general techniques

2501 Fanali, S., Caponecchi, G. and Aturki, Z.: Enantiomeric resolution by capillary zone electrophoresis: use of pepsin for separation of chiral compounds of pharmaceutical interest. *J. Microcolumn Sep.*, 9 (1997) 9-14; *C.A.*, 126 (1997) 229720c.
 2502 Fillet, M., Bechet, I., Schomburg, G., Hubert, P. and Crommen, J.: Enantiomeric separation of acidic drugs by capillary electrophoresis using a combination of charged and uncharged β -cyclodextrins as chiral selectors. *J. High Resolut. Chromatogr.*, 19 (1996) 669-673.
 2503 Gilges, M.: Determination of impurities in an acidic drug substance by micellar electrokinetic chromatography. *Chromatographia*, 44 (1997) 191-196.
 2504 Hows, M.E.P., Perrett, D. and Kay, J.: Optimisation of a simultaneous separation of sulphonamides, dihydrofolate reductase inhibitors and β -lactam antibiotics by capillary electrophoresis. *J. Chromatogr. A*, 768 (1997) 97-104.
 2505 Kelly, M.A., Altria, K.D. and Clark, B.J.: Approaches used in the reduction of buffer electrolysis effects for routine capillary electrophoresis procedures in pharmaceutical analysis. *J. Chromatogr. A*, 768 (1997) 73-80.

2506 Liu, J., Coffey, H., Detlefsen, D.J., Li, Y. and Lee, M.S.: Chiral recognition and racemic resolution of drug enantiomers by electrophoresis based on host-guest complexation. *J. Chromatogr. A*, 763 (1997) 261-269.

2507 Rodriguez, V.G., Lucangioli, S.E., Fernández Otero, G.C. and Carducci, C.N.: Purity testing of drugs by capillary electrophoresis. *J. High Resolut. Chromatogr.*, 19 (1996) 703-705.

2508 Skanchy, D.J.: Capillary electrophoresis methodologies for solving problems in pharmaceutical analysis (drug separations). *Avail. Univ. Microfilms Int.*, Order No. DA9637347, 1996, 274 p.; *C.A.*, 126 (1997) 162346q.

2509 Tanaka, Y. and Terabe, S.: Separation of the enantiomers of basic drugs by affinity capillary electrophoresis using a partial filling technique and α_1 -acid glycoprotein as chiral detector. *Chromatographia*, 44 (1997) 119-128.

2510 Taylor, M.R. and Teale, P.: Gradient capillary electrochromatography of drug mixtures with UV and electrospray ionisation mass spectrometric detection. *J. Chromatogr. A*, 768 (1997) 89-95.

2511 Thormann, W.: Drug monitoring by capillary electrophoresis. In: Wong, S.H.-Y. and Sunshine, I. (Editors), *Handb. Anal. Ther. Drug Monit. Toxicol.*, CRC, Boca Raton, 1997, pp. 1-19; *C.A.*, 126 (1997) 126411y - a review with 70 refs.

2512 Zhang, H. and Diang, T.: (Applications of capillary electrophoresis in drug analysis). *Hebei Daxue Xuebao Ziran Kexueban*, 16 (1996) 88-95; *C.A.*, 126 (1997) 176959d - a review with 60 refs.

See also 1809, 1813, 1832, 1837, 1839, 1852, 1865, 1869, 1871, 1874, 1938.

32b. Antirheumatics and antiinflammatory drugs

2513 Gu, X., Meleka-Boules, M., Chen, C.-L., Ceska, D.M. and Riffany, D.M.: Determination of flunixin in equine urine and serum by capillary electrophoresis. *J. Chromatogr. B*, 692 (1997) 187-198.

2514 Kunkel, A., Günter, S. and Wätzig, H.: Quantitation of acetaminophen and salicylic acid in plasma using capillary electrophoresis without sample pretreatment. Improvement of precision. *J. Chromatogr. A*, 768 (1997) 125-133.

See also 1870, 1935, 2517.

32c. Autonomic and cardiovascular drugs

2515 Jin, H., Li, F., Gu, J.L. and Fu, R.N.: HPCE enantiomeric separation of nafronyl oxalate. *Chin. Chem. Lett.*, 7 (1996) 1103-1104; *C.A.*, 126 (1997) 176970a.

2516 Wang, Z., Huang, A., Sun, Y. and Sun, Z.: Use of cyclodextrins as chiral selector for the chiral separation of anticholinergic drugs such as anisodamine and glycopyrronium in capillary zone electrophoresis. *J. High Resolut. Chromatogr.*, 19 (1996) 697-699.

See also 1839, 2473.

32d. Central nervous system drugs

- 2517 Ashcroft, A.E., Major, H.J., Wilson, I.D., Nicholls, A. and Nicholson, J.K.: Application of capillary electrophoresis-mass spectrometry to the analysis of urine samples from animals and man containing paracetamol and phenacetin and their metabolites. *Anal. Commun.*, 34 (1997) 41-43; C.A., 126 (1997) 246281c.
- 2518 Degenhardt, M. and Wätzig, H.: Purity control of carbamazepine by micellar electrokinetic chromatography. *J. Chromatogr. A*, 768 (1997) 113-123.
- 2519 Heitmeier, S. and Blaschke, G.: (Direct determination of drug metabolites in body fluids by capillary electrophoresis, e.g. non-opioid analgetics). *Pharm. Unserer Zeit*, 25 (1996) 276; C.A., 126 (1997) 126449s.
- 2520 Jinno, K., Han, Y. and Nakamura, M.: Analysis of anxiolytic drugs by capillary electrophoresis with bare and coated capillaries. *J. Capillary Electrophor.*, 3 (1996) 139-145; C.A., 126 (1997) 255569e.
- 2521 Lamparczyk, H., Kowalski, P., Rajzer, D. and Nowakowska, J.: Determination of piracetam in human plasma by capillary electrophoresis. *J. Chromatogr. B*, 692 (1997) 483-487.
- 2522 Li, S. and Weber, S.G.: Determination of barbiturates by solid-phase microextraction and capillary electrophoresis. *Anal. Chem.*, 69 (1997) 1217-122.
- 2523 Oliq, E.H., Hörnsten, L. and Sprecher, H.: Oxygenation of 5,8,11-eicosatrienoic acid by prostaglandin H synthase-2 of ovine placental cotyledons: isolation of 13-hydroxy-5,8,11-eicosatrienoic and 11-hydroxy-5,8,12-eicosatrienoic acids. *J. Chromatogr. B*, 690 (1997) 332-337.
- 2524 Spencer, B.J., Zhang, W. and Purdy, W.C.: Capillary electrophoretic separation of tricyclic antidepressants using charged carboxymethyl- β -cyclodextrin as a buffer additive. *Electrophoresis (Weinheim)*, 18 (1997) 736-744.
- 2525 Wu, H., Guan, F. and Luo, Y.: (Determination of barbiturates in human plasma and urine by high performance capillary electrophoresis). *Yaowu Fenxi Zazhi*, 16 (1996) 316-321; C.A., 126 (1997) 271728m.

See also 1868.

32e. Chemotherapeutics (exc. cytostatics and antibiotics)

- 2526 Lin, C.-E., Chang, C.-C. and Lin, W.-C.: Migration behavior and separation of sulfonamides in capillary zone electrophoresis. III. Citrate buffer as a background electrolyte. *J. Chromatogr. A*, 768 (1997) 105-112.
- 2527 Miyawa, J.H., Alasandro, M.S. and Riley, C.M.: Application of a modified central composite design to optimize the capillary electrochromatographic separation of related S-oxidation compounds. *J. Chromatogr. A*, 769 (1997) 145-153.

See also 2504.

32g. Other drug categories

- 2528 Bannefeld, K.-H., Stass, H. and Blaschke, G.: Capillary electrophoresis with laser-induced fluorescence detection, an adequate alternative to high-performance liquid chromatography, for the determination of ciprofloxacin and its metabolite desethyleneciprofloxacin in human plasma. *J. Chromatogr. B*, 692 (1997) 453-459.
- 2529 Llambias, E.B.C. and Luo, J.: Study of phenformin metabolism in rat liver microsomes by HPLC, CE and online HPLC-electrospray ionization mass spectrometry. *Biomed. Chromatogr.*, 10 (1996) 155-160; C.A., 125 (1996) 131515u.
- 2530 Paris, S., Blaschke, G., Locher, M., Borbe, H.O. and Engel, J.: Investigation of the stereoselective *in vivo* metabolism of the chiral antiasthmatic/antiallergic drug flezelastine by high-performance liquid chromatography and capillary zone electrophoresis. *J. Chromatogr. B*, 691 (1997) 463-471.
- 2531 Pérez-Ruiz, T., Martínez-Lozano, C., Sanz, A. and Bravo, E.: Determination of bromhexine and ambroxol in pharmaceutical dosage forms, urine and blood serum. *J. Chromatogr. B*, 692 (1997) 199-205.
- 2532 Siluveru, M. and Stewart, J.T.: Enantioselective determination of S-(+)- and R(-)-ondansetron in human serum using derivatized cyclodextrin-modified capillary electrophoresis and solid-phase extraction. *J. Chromatogr. B*, 691 (1997) 217-222.
- 2533 Song, J.-Z., Wu, X.-J., Sun, Z.-P., Tian, S.-J., Wang, M.-L. and Wang, R.-L.: Determination of thiamphenicol in human plasma by micellar electrokinetic capillary chromatography. *J. Chromatogr. B*, 692 (1997) 445-451.
- 2534 Sun, S.-W. and Chen, L.-Y.: Optimization of capillary electrophoretic separation of quinolone antibacterials using the overlapping resolution mapping scheme. *J. Chromatogr. A*, 766 (1997) 215-224.
- 2535 Tong, L., Hang, D., Keyuan, Z. and Guangxin, L.: (Evaluation for determination of warfarin in serum by micellar electrokinetic capillary chromatography). *Zhongguo Yaoxue Zazhi (Beijing)*, 31 (1996) 358-360; C.A., 126 (1997) 42181k.

See also 1842.

32h. Toxicological and forensic applications

- 2536 Bouaicha, N., Hennion, M.-C. and Sandra, P.: Determination of okadaic acid by micellar electrokinetic chromatography with ultraviolet detection. *Toxicon*, 35 (1997) 273-281; C.A., 126 (1997) 196160q.
- 2537 Ichida, S., Wada, T., Tahara, M., Imoto, K. and Zhang, Y.A.: Relationship between specific binding of ^{125}I - ω -conotoxin GVIA and GTP binding protein: effects of the GTP analogues, masitinparan and AlF₄⁻. *Biochim. Biophys. Acta*, 1325 (1997) 215-225.
- 2538 Kuchenmeister, F., Wang, M., Klein, R.G. and Schmezer, P.: Transport of reactive metabolites of procarcinogens between different liver cell types, as demonstrated by the single cell microgel electrophoresis assay. *Toxicol. Lett.*, 88 (1996) 29-34; C.A., 126 (1997) 43869c.

- 2539 Murase, T., Nakamura, A., Matsushima, A. and Yamai, S.: An epidemiological study of *Salmonella enteritidis* by pulsed-field gel electrophoresis (PFGE): Several PFGE patterns observed in isolates from a food poisoning outbreak. *Microbiol. Immunol.*, 40 (1996) 873-875; *C.A.*, 126 (1997) 44807y.

See also 2171, 2309.

32i. Plant extracts

- 2540 Bazzanella, A., Lochmann, H., Mainka, A. and Bächmann, K.: Determination of inorganic anions, carboxylic acids and amino acids in plant matrices by capillary zone electrophoresis. *Chromatographia*, 45 (1997) 59-62.
 2541 Kang, S.H., Chung, W.J., Yoon, H.J. and Chung, D.S.: (Simultaneous determination of berberine, cinnamic acid and glycyrrhizin in pharmaceutical formulations by capillary electrophoresis with diode-array detection). *J. Korean Chem. Soc.*, 41 (1997) 98-104; *C.A.*, 126 (1997) 255554w.

33. CLINICO-CHEMICAL APPLICATIONS

33a. General papers and reviews

See 2511.

- 33b. *Complex mixtures and profiling (single compounds by cross-reference only)*
- 2542 Corey, E., Arfman, E.W., Liu, A.Y. and Vessella, R.L.: Improved reverse transcriptase-polymerase chain reaction protocol with exogenous internal competitive control for prostate-specific antigen mRNA in blood and bone marrow. *Clin. Chem. (Washington)*, 43 (1997) 443-452.
 2543 Fortina, P., Cheng, J., Shoffner, M.A., Surrey, S., Hitchcock, W.M., Kricka, L.J. and Wilding, P.: Diagnosis of Duchenne/Becker muscular dystrophy and quantitative identification of carrier status by use of entangled solution capillary electrophoresis. *Clin. Chem. (Washington)*, 43 (1997) 745-751.
 2544 Ishikawa, T., Ichikawa, Y., Miura, Y., Momiyama, M., Keller, C., Koo, K., Akitaya, T., Shimada, H. and Mitsuhashi, M.: Construction of cDNA bank from biopsy specimens for multiple gene analysis of cancer. *Clin. Chem. (Washington)*, 43 (1997) 764-770.
 2545 Kunkel, A. and Waetzig, H.: (Capillary electrophoresis for analytical determinations from body fluids). *Pharm. Unserer Zeit*, 25 (1996) 275; *C.A.*, 126 (1997) 14282a.
 2546 Lam, C.W.K., Pang, C.-P., Poon, P.M.K., Yin, C.-H. and Bharathi, G.: Rapid screening for α_1 -antitrypsin Z and S mutations. *Clin. Chem. (Washington)*, 43 (1997) 403-404.
 2547 Mohr, S., Cullen, P., Schmidt, R., Cignarella, A. and Assmann, G.: Avoidance of false positives in PCR-based mRNA differential display during investigation of nonstandardized tissues or cells. *Clin. Chem. (Washington)*, 43 (1997) 182-184.
 2548 Navaglia, F., Basso, D. and Plebani, M.: Touchdown PCR: a rapid method to genotype *Helicobacter pylori* infection. *Clin. Chim. Acta*, 262 (1997) 157-160.

- 2549 Numata, Y. and Matsumoto, Y.: Rapid detection of α -human atrial natriuretic peptide in plasma by a sensitive immuno-PCR sandwich assay. *Clin. Chim. Acta*, 259 (1997) 169-176.

- 2550 Oriola, J., Plensa, I., Machuca, I., Pavía, C. and Rivera-Fillat, F.: Rapid screening method for detecting mutations in the 21-hydroxylase gene. *Clin. Chem. (Washington)*, 43 (1997) 557-561.

- 2551 Oto, M., Koguchi, A. and Yuasa, Y.: Analysis of a polyadenine tract of the transforming growth factor- β type II receptor gene in colorectal cancers by non-gel-sieving capillary electrophoresis. *Clin. Chem. (Washington)*, 43 (1997) 759-763.

- 2552 Rohlf, E.M., Learning, W.G., Friedman, K.J., Couch, F.J., Weber, B.L. and Silverman, L.M.: Direct detection of mutations in the breast and ovarian cancer susceptibility gene BRCA1 by PCR-mediated site-directed mutagenesis. *Clin. Chem. (Washington)*, 43 (1997) 24-29.

- 2553 Schollen, E., Vandenbergk, P., Cassiman, J.-J. and Matthijs, G.: Development of reverse dot-blot system for screening of mitochondrial DNA mutations associated with Leber hereditary optic atrophy. *Clin. Chem. (Washington)*, 43 (1997) 18-23.

See also 1926, 1930, 1946, 2098, 2101, 2107, 2143, 2145, 2148, 2209, 2210, 2235, 2238, 2267, 2274, 2308, 2313, 2314, 2315, 2416, 2427, 2430, 2437, 2449, 2456.

34. FOOD ANALYSIS

34a. General papers and reviews

- 2554 Sato, Y., Sasa, K. and Kitagishi, K.: (Food analysis by capillary electrophoresis). *Foods Food Ingredients J. Jpn.*, 171 (1997) 106-112; *C.A.*, 126 (1997) 143412s - a review with 8 refs.

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

See 1881, 1887.

35. ENVIRONMENTAL ANALYSIS

35a. General papers and reviews

- 2555 Bissell, M.G., Okorodudu, A.O., Petersen, J.R. and Mohammad, A.A.: Laser induced resonance energy transfer - a novel approach towards achieving high sensitivity in capillary electrophoresis. Part B: Applications for environmental testing. *J. Chromatogr. A*, 767 (1997) 217-221.

See also 1882.

- 35b. *Air pollution (complex mixtures; single compounds by cross-reference only)*

See 2557, 2581.

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

2556 Farré, J., Borrull, F. and Calull, M.: Application of capillary electrophoresis in the quality control of osmotically treated water. *Chromatographia*, 44 (1997) 235-239.

2557 Mainka, A., Ebert, P., Kibler, M., Prokop, T., Tenberken, B. and Bächmann, K.: Development of new methods for the analysis of carboxylic acids and carbonyl compounds in size classified raindrops by CE for application in modelling atmospheric processes. *Chromatographia*, 45 (1997) 158-162.

See also 1890, 1939, 2492, 2494, 2498, 2590.

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

See 1884, 2494.

36. SOME TECHNICAL PRODUCTS AND COMPLEX MIXTURES

36a. Surfactants

2558 Heinig, K., Vogt, C. and Werner, G.: Separation of nonionic surfactants of the polyoxyethylene type by capillary electrophoresis. *Fresenius J. Anal. Chem.*, 357 (1997) 695-700.

2559 Poole, S.K. and Poole, C.F.: Characterization of surfactant selectivity in micellar electrokinetic chromatography. *Analyst (Cambridge)*, 122 (1997) 267-274.

See also 1859, 1949.

36b. Antioxidants and preservatives

2560 Kuo, K.-L. and Hsieh, Y.-Z.: Determination of preservatives in food products by cyclodextrin-modified capillary electrophoresis with multiwavelength detection. *J. Chromatogr. A*, 768 (1997) 334-341.

37. CELLS, CELLULAR PARTICLES AND SUPRAMOLECULAR STRUCTURES

2561 Chen, N. and Chrambach, A.: Isolation of subcellular-sized particles separated by electrophoresis in dilute polymer solution, using commercial electrophoresis apparatus with intermittent scanning of fluorescence. *Electrophoresis (Weinheim)*, 18 (1997) 781-783.

2562 Dominguez, M.A., Linares, J., Pulido, A., Perz, J.L. and de Lencastre, H.: Molecular tracking of coagulase-negative staphylococcal isolates from catheter-related infections. *Microb. Drug Resist. (Larchmont)*, 2 (1996) 423-429; C.A., 126 (1997) 154766m.

2563 Fourest, B., Hakem, N., Perrone, J. and Guillaumont, R.: Application of capillary electrophoresis to the characterization of some colloidal particles. *J. Radioanal. Nucl. Chem.*, 208 (1996) 309-318; C.A., 126 (1997) 136104q.

2564 Gibson, J., Lorenz, E. and Owen, R.J.: Lineages within *Campylobacter jejuni* defined by numerical analysis of pulsed field gel electrophoretic DNA profiles. *J. Med. Microbiol.*, 46 (1997) 157-163; C.A., 126 (1997) 155003x.

2565 Ho, C.C., Ottewill, R.H. and Yu, L.: Examination of ellipsoidal polystyrene particles by electrophoresis. *Langmuir*, 13 (1997) 1925-1930; C.A., 126 (1997) 172148r.

2566 Hu, S., Huang, B., Li, P. and Cheng, J.: (Analysis of single cells by capillary electrophoresis). *Sepu*, 15 (1997) 27-30; C.A., 126 (1997) 222380h.

2567 Livesley, M.A., Smith, S.N., Armstrong, R.A. and Barker, G.A.: Analysis of plasmid profiles of *Aeromonas salmonicida* isolates by pulsed field gel electrophoresis. *FEMS Microbiol. Lett.*, 146 (1997) 297-301; C.A., 126 (1997) 127441v.

2568 Metelitsa, L.A., Kalashnikova, L.E., Mogilevich, S.A. and Luik, A.I.: (Use of the indices of E-rosette formation and electrophoretic mobility for complex evaluation of functional state of leucocytes). *Ukr. Biokhim. Zh.*, 68 (1996) 84-87; C.A., 126 (1997) 17481a.

2569 Shi, Z.-Y., Liu, P.Y.-F., Lau, Y.-J., Lin, Y.-H. and Hu, B.-S.: Use of pulsed-field gel electrophoresis to investigate an outbreak of *Serratia marcescens*. *J. Clin. Microbiol.*, 35 (1997) 325-327; C.A., 126 (1997) 128910j.

2570 Völkl, A., Mohr, H., Weber, G. and Fahimi, H.D.: Isolation of rat hepatic peroxisomes by means of immune free flow electrophoresis. *Electrophoresis (Weinheim)*, 18 (1997) 774-780.

See also 1751, 2389, 2415.

38. INORGANIC COMPOUNDS

38a. Cations

2571 Glod, B., Pobozy, E., Marczak, S. and Trojanowicz, M.: Capillary electrophoresis as a tool for speciation analysis of heavy metals. *Acta Chromatogr.*, 6 (1996) 39-53; C.A., 126 (1997) 54199k.

2572 Guo, Q., Chang, L.W., Li, Y.X. and Zhao, H.Y.: Determination of chromate ion in water using high performance capillary electrophoresis. *Chin. Chem. Lett.*, 8 (1997) 65-66; C.A., 126 (1997) 255139q.

2573 Haddad, P.R.: Comparison of ion chromatography and capillary electrophoresis for the determination of inorganic ions. *J. Chromatogr. A*, 770 (1997) 281-290 - a review with 38 refs.

2574 Jen, J.-F., Wu, M.-H. and Yang, T.C.: Simultaneous determination of vanadium(IV) and vanadium(V) as EDTA complexes by capillary zone electrophoresis. *Anal. Chim. Acta*, 339 (1997) 251-257.

2575 Jones, P. and Hardy, S.: Development of a capillary electrophoretic method for the separation and determination of trace inorganic and organomercury species utilizing the formation of highly absorbing water soluble dithizone sulphonate complexes. *J. Chromatogr. A*, 765 (1997) 345-352.

2576 Macka, M., Paull, B., Andersson, P. and Haddad, P.R.: Determination of barium and strontium by capillary zone electrophoresis using an electrolyte containing sulfonazo III. *J. Chromatogr. A*, 767 (1997) 303-310.

- 2577 Michalke, B. and Schramel, P.: Coupling of capillary electrophoresis with ICP-MS for speciation investigations. *Fresenius J. Anal. Chem.*, 357 (1997) 594-599.
- 2578 Tangen, A., Lund, W. and Frederiksen, R.B.: Determination of Na⁺, K⁺, Mg²⁺ and Ca²⁺ in mixtures of seawater and formation water by capillary electrophoresis. *J. Chromatogr. A*, 767 (1997) 311-317.
- 2579 Theobald, A. and Dunemann, L.: Capillary zone electrophoresis with UV-scanning detection for the analysis of metal species and their organic binding partners in biological systems. *J. High Resolut. Chromatogr.*, 19 (1996) 608-612.
- 2580 Verhelst, V., Mollie, J.-P. and Campeol, F.: Capillary zone electrophoretic determination of ionic impurities in silicone products used for electronic applications. *J. Chromatogr. A*, 770 (1997) 337-344.
- See also 1760, 2540, 2582, 2592.
- 38b. Anions*
- 2581 Dabek-Zlotorzynska, E., Piechowski, M., Liu, F., Kennedy, S. and Dlouhy, J.F.: Routine determination of major anions in atmospheric aerosols by capillary electrophoresis. *J. Chromatogr. A*, 770 (1997) 349-359.
- 2582 Divan, K.: Improved separation and detection of inorganic ions by capillary electrophoresis. *Spec. Publ.-R. Soc. Chem.*, 196(Progress in Ion Exchange) (1997) 176-186; *C.A.*, 126 (1997) 287192t - a review with 10 refs.
- 2583 Doble, P., Andersson, P. and Haddad, P.R.: Determination and prediction of transfer ratios for anions in capillary zone electrophoresis with indirect UV detection. *J. Chromatogr. A*, 770 (1997) 291-300.
- 2584 Ehmann, T., Bächmann, K., Fabry, L., Rüfer, H., Pahlke, S. and Kotz, L.: Optimization of the electrokinetic sample introduction in capillary electrophoresis for the ultra trace determination of anions on silicon wafer surfaces. *Chromatographia*, 45 (1997) 301-311.
- 2585 Haddad, P.R.: Ion chromatography and capillary electrophoresis for the determination of inorganic anions - current status and relative merits. *Spec. Publ.-R. Soc. Chem.*, 196(Progress in Ion Exchange) (1997) 115-123; *C.A.*, 126 (1997) 287190r - a review with 13 refs.
- 2586 Harakuwe, A.H. and Haddad, P.R.: Analytical performance characteristics of the separation of fluoride in toothpaste by capillary zone electrophoresis. *Anal. Commun.*, 34 (1997) 67-68; *C.A.*, 126 (1997) 229387z.
- 2587 Krokhin, O.V., Xu, W.-Z., Hoshino, H., Oleg, A. and Yotsuyanagi, T.: Simultaneous determination of inorganic anions and equally charged complexes of transition metals with polyamino-carboxylic acids by capillary electrophoresis. *Chem. Lett.*, (1996) 1095-1096; *C.A.*, 126 (1997) 139176a.
- 2588 Kuban, P. and Karlberg, B.: On-line dialysis coupled to a capillary electrophoresis system for determination of small anions. *Anal. Chem.*, 69 (1997) 1169-1173.
- 2589 Qi, S.Z., Fang, X.H., Huang, A.J. and Sun, Y.L.: The molecular shape effect in the separation of ionic isomers by capillary zone electrophoresis. *Chin. Chem. Lett.*, 7 (1996) 1105-1108; *C.A.*, 126 (1997) 131167c.
- 2590 Ren, H. and Wu, M.: (Determination of nitrite and nitrate in water by capillary electrophoresis). *Huanjing Kexue*, 17 (1996) 53-55; *C.A.*, 126 (1997) 232816u.
- 2591 Sirén, H., Määttänen, A. and Riekola, M.-L.: Determination of small anions by capillary electrophoresis using indirect UV detection with sulphonated nitrosonaphthal dyes. *J. Chromatogr. A*, 767 (1997) 293-301.
- 2592 Soga, T. and Ross, G.A.: Capillary electrophoretic determination of inorganic and organic anions using 2,6-pyridinedicarboxylic acid: effect of electrolyte's complexing ability. *J. Chromatogr. A*, 767 (1997) 223-230.
- 2593 Stover, F.S.: Capillary electrophoresis of longer-chain polyphosphates. *J. Chromatogr. A*, 769 (1997) 349-351.
- 2594 Thornton, M.J. and Fritz, J.S.: Separation of inorganic anions in acidic solution by capillary electrophoresis. *J. Chromatogr. A*, 770 (1997) 301-310.
- 2595 Van den Hoop, M.A.G.T. and van Staden, J.J.: Determination of phosphate in natural waters by capillary electrophoresis. Influence of solution composition on migration time and response. *J. Chromatogr. A*, 770 (1997) 321-328.
- 2596 Wang, P., Li, S.F.Y. and Lee, H.K.: Simultaneous determination of monofluorophosphate and fluoride in toothpaste by capillary electrophoresis. *J. Chromatogr. A*, 765 (1997) 353-359.
- 2597 Wu, M. and Ren, H.: (Capillary electrophoresis-indirect ultraviolet detection of anions of different chemical states). *Fenxi Huaxue*, 24 (1996) 1178-1181; *C.A.*, 126 (1997) 180490m.

See also 1831, 1915, 2483, 2556, 2580.