PREP 2010 Preliminary Scientific Program

Sunday, May 9, 2010

EDUCATIONAL TRAINING WORKSHOPS

– Must pre-register in order to attend –

WORKSHOP 1

8:30 am–12:30 pm

Preparative Chromatography for the Purification of Intermediates and API

Lecturers: Dr. Kathleen Mihllbachler, Bristol-Meyers Squibb, and
Dr. Olivier Dapremont, Ampac Fine Chemicals

This workshop will focus on development of method for the preparative purification of small molecules for the pharmaceutical industry. After an introduction of the basics of liquid chromatography for small molecule, the instructors will present a practical approach to the development of preparative separation for Batch HPLC and Simulated Moving Bed through a series of examples. The attendees will learn valuable information and techniques to apply in the laboratory to increase throughput and performances. A book of the course will be provided to each attended at completion of the training. The book will contain copies of the slides as well as additional tables of data relevant to preparative chromatography.

WORKSHOP 2

1:30–5:30 pm

Bringing Biomolecules to Market (and keeping them there)

Lecturers: Dr. Joan Newburger, Johnson & Johnson Consumer Products Worldwide, and
Ms. Lois Ann Beaver, LAB Enterprises

New drug products start with innovation. Frequently the most impactful drugs addressing critical medical needs, must overcome significant process and regulatory hurdles to gain approval and reach the patient. Everyone in the industry understands that the costs and timeframes are huge, that numerous problems can derail progress and that setbacks can affect the viability of the product or even the viability of the business itself.

The outcome of a decade's long and continuing concerted effort by members of the regulatory community and industry carried out within the ICH* and in other venues, (ISPE, WHO, AAPS, etc.**) resulted in certain approaches derived from principles of Quality and Risk Management that encompass all aspects of bringing drugs to market, from product development to commercial production. Quality by Design, Quality Systems Management, Science-based Risk Management., Process Analytical Technology and Continuous Process Improvement are tools that can be incorporated into basic drug development processes. The potential benefits to industry are diverse and can include lower production costs, faster approvals, fewer recalls, new patents and increased regulatory flexibility. Time and dollars invested in implementation should yield measurable value.

In this workshop we will examine the relationship between good drug development science, quality and regulatory flexibility, with emphasis on application to the biopharmaceutical industry. Particular attention will be placed on the practice of Quality by Design. A practical study of how the integration of quality and risk management concepts and tools is used in an application to bring a MAb to market will be presented. In addition, we will address the challenges for technology and regulation created by the emerging biosimilars industry along with the current status of internationally developed guidance.

*International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use

** International Society of Pharmaceutical Engineers, World Health Organization, American Association of Pharmaceutical Scientists

6:00 – 8:00 pm	**SYMPOSIUM REGISTRATION OPEN**
6:00 – 8:00 pm	**RECEPTION**

Monday, May 10, 2010

8:15 am **SYMPOSIUM REGISTRATION OPEN**

8:55 am **WELCOME & OPENING REMARKS**

1. PURIFICATION OF MONOCLONAL ANTIBODIES

9:00 am **An Automated High-throughput Screening Method to Assess Monoclonal Antibody Fit to Common Purification Process Conditions Using a Single Filter Plate.** Brian D. Bowes[1], Niels Richings[2], Joe Naemura[2], Thao Nguyen[2], Ron Gillespie[2], John Moscariello[2], [1]Department of Chemical Engineering, University of Delaware, Newark, DE 19716, USA; [2]Purification Process Development, Amgen, Seattle, WA 98119, USA

9:20 am **Leveraging Downstream Depth Filtration for HCP Removal in a Two-column Purification Process of MAb.** Nathan Mao, Yik Lam, Matthew Westoby, John Pieracci, Process Biochemistry, Biogen IDEC, San Diego, CA 92122, USA

9:40 am **Salt Tolerant Membrane Adsorber for Robust Contaminant Removal.** Nathalie Fraud[1], Rene Faber[2], Yujing Yang[1], Uwe Gottschalk[2], [1]Sartorius Stedim North America, Bohemia, NY 11716, USA; [2]Sartorius Stedim Biotech GmbH, D-37079 Goettingen, GERMANY

10:00 am **Rapid Method Development for MAb Purification from Challenging Feed.** Kjell Eriksson, Anders Ljunglöf and Tuomo Frigård, GE Healthcare Bio-Sciences, Björkgatan 30, SE-751 84 Uppsala, SWEDEN

10:20 am **A Disposable Downstream Process for the Purification of a Monoclonal Antibody.** Emily Belcher Schirmer, Percivia, LLC, 1 Hampshire Street 5th Floor, Cambridge, MA 02149, USA

10:40 am **PAUSE, EXHIBITS, POSTERS**
Location: Millennium Ballroom, 2nd floor

Monday, May 10, 2010

2. PURIFICATION OF MONOCLONAL ANTIBODIES

11:10 am **The Need for Quality**. Lois A. Beaver, LAB Enterprises, Chevy Chase, MD, USA

11:30 am **High-throughput Screening of Cleaning-in-place Protocols for Antibody and Antibody Fragment Purification on Affinity Chromatography Resins.** Anna Grönberg, Enrique Carredano, Kjell Eriksson, Anna Mjärdestam, Susanne Nyholm Westin, Hans J. Johansson, GE Healthcare Bio-Sciences AB, Björkgatan 30, SE-751 84 Uppsala, SWEDEN

11:50 am **Design and Operation of MCSGP Processes for Multiple Fraction Protein Purifications.** Massimo Morbidelli, ETH Zurich, Institute for Chemical and Bioengineering, Wolfgang- Pauli-Strasse 10, 8093 Zürich, SWITZERLAND

12:30–2:00 pm **PAUSE, EXHIBITS, POSTERS, VENDOR WORKSHOPS**
Location of Exhibits and Posters: Millennium Ballroom, 2nd floor

12:45–2:00 pm **Free Vendor Workshop sponsored by Pall Life Sciences**

12:45–2:00 pm **Free Vendor Workshop sponsored by Novasep**

12:45–2:00 pm **Free Vendor Workshops to be announced**

2:00–3:25 pm **POSTER SESSION I** (Location: Millennium Ballroom, 2nd floor)

3. PURIFICATION OF PROTEINS

3:30 pm **pH Transients in Hydroxyapatite Columns - Chemistry and Dynamic Modeling.** Theresa Bankston, Laura Dattolo, Giorgio Carta, Department of Chemical Engineering, University of Virginia, Charlottesville, VA 22904-4742, USA

3:50 pm **Affinity Interactions Under Chaotropic Conditions: A Kinetic and Thermodynamic Study.** Rene Ueberbacher[1,2], Eva Berger[2], Alois Jungbauer[1,2], Rainer Hahn[1,2], [1]Austrian Center of Biopharmaceutical Technology, Muthgasse 18, 1190 Vienna, AUSTRIA; [2]Department of Biotechnology, University of Natural Resources and Applied Life Sciences Vienna, Muthgasse 18, 1190 Vienna, AUSTRIA

4:10 pm **High Performance Affinity Chromatography to Optimize Antibody Purification via Protein A Capture.** Hector Osuna-Sanchez[1], Candy Ng[2], Eva Sorensen[2], Daniel Bracewell[2], Eric Valery[1], [1]NOVASEP Process, Boulevard de la Moselle, BP 50 - 54340 Pompey, FRANCE; [2]University College London, Dept. of Biochemical Engineering, Torrington place, London WC1E 7JE, UK

4:30 pm **Non-linear Isotherm with pH and Salt Dependence for Protein Adsorption in Ion-exchange Chromatography.** Bertrand Guélat[1], Guido Ströhlein[1,2], Thomas Müller-Späth[1,2], Marco Lattuada[1], Abhijit Tarafder[1], Massimo Morbidelli[1], [1]Institute for Chemical and Bioengineering, ETH Zürich, 8093 Zürich, SWITZERLAND; [2]ChromaCon AG, Technoparkstr. 1, 8005 Zürich, SWITZERLAND

4:50 pm **PAUSE**

4. PURIFICATION OF PEPTIDES

5:10 pm **Effect of Pore Shrinkage on Macromolecular Diffusion in Porous Beads.** Bertrand de Neuville, A. Tarafder, H. Thomas, M. Morbidelli, Institute for Chemical- and Bioengineering,ETH Zürich, Wolfgang-Pauli-Str. 10, CH-8093 Zürich, SWITZERLAND

5:30 pm **Application of Spiral Countercurrent Chromatography to Peptides and Proteins.** Martha Knight[1], Thomas M. Finn[1], Adam Clayton[2], John Zehmer[2], [1]CC Biotech LLC and [2]APC Biotechnology Services, Inc., 9700 Great Seneca Highway, Rockville, MD 20850-3307, USA

5:50 pm **The Benefits of Process Analytical Technology (PAT)-based Buffer Dilution in Production Scale Bioprocesses.** Michael Li[1], Dagmar Meissner[2], [1]Asahi Kasei Bioprocess, Glenview, IL, USA; [2]BioProcess Solutions, LLC, San Diego, CA, USA

6:10 pm **RECEPTION SPONSORED BY PALL LIFE SCIENCES**
(Location: Millennium Ballroom, 2nd floor)

7:10 pm **PAUSE**

Tuesday, May 11, 2010

7:30–8:45 am **Free Vendor Workshops to be announced**

5. SIMULATED MOVING BED

9:00 am **Comparison of Streamlined, Two-Column, Simulated Moving-Bed Processes for Chiral Separation.** Rui C. R. Rodrigues, Ricardo J. S. Silva, José P. B. Mota, Requimte/CQFB, Departamento de Química, Faculdade de Cências e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica, PORTUGAL

9:20 am **Cycle to Cycle Open Loop Control in Protein Purification Applying Continuous Chromatography (MCSGP).** Martin Krättli[1], Guido Ströhlein[1,2], Lars Aumann[1,2], Thomas Müller-Späth[1,2], Massimo Morbidelli[1], [1]Institute of Chemical and Bioengineering, Department of Chemistry and Applied Bioscience, ETH Zürich, CH-8093 Zürich, SWITZERLAND; [2]ChromaCon AG, Technoparkstr. 1, CH-8005 Zürich, SWITZERLAND

9:40 am **Separation of an Intermediate Target out of a Ternary Mixture by Continuous Countercurrent Chromatography.** Jadwiga Nowak[1], Dorota Antos[2], Andreas Seidel-Morgenstern[1,3], [1]Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, GERMANY; [2]Department of Chemical and Process Engineering, Rzeszów University of Technology, Rzeszów, POLAND; [3]Chair of Chemical Process Engineering, Otto von Guericke University, Magdeburg, GERMANY

10:00 am **Continuous Protein Purification by Simulated Moving Bed: An Open Platform for Increased Productivity and Purity.** Anthony Grabski, Robert Mierendorf, Semba Biosciences, Inc., 505 South Rosa Road, Madison, WI 53719, USA

10:20 am **Does Darwin's Theory of Evolution Apply to Chromatography?** Eric Valery[1], Michel Bailly[2], [1]NOVASEP Process, Boulevard de la Moselle, BP 50 - 54340 Pompey, FRANCE; [2]LSGC, 1 rue Grandville, 54000 Nancy, FRANCE

10:40 am **PAUSE, EXHIBITS, POSTERS**
Location: Millennium Ballroom, 2nd floor

6. SIMULATED MOVING BED AND CHIRAL SEPARATIONS

11:10 am **Fast Development of a Chiral SMB Separation Under Nonlinear Chromatographic Conditions by On-line Optimizing Control.** Simon Jermann, Christian Langel, Cristian Grossmann, Marco Mazzotti, Manfred Morari, Massimo Morbidelli, ETH Zürich, Zürich, SWITZERLAND

11:30 am **Purification of Pharmaceutical Intermediates on SMB with Reverse Phase Chromatography.** Anil Oroskar, Abhilesh Agarwal, Asha Oroskar, Orochem Technologies, Inc., 331 Eisenhower Lane South, Lombard, IL 60148, USA

11:50 am **Practical Aspects of Preparative Enantioselective Supercritical Fluid Chromatography. Screening and Scale-up using Immobilized Polysaccharide Chiral Stationary Phases and Non-alcohol-based Modifiers.** Geoffrey B. Cox, Bruce Coryell, James Lee, William Watts, Chiral Technologies, Inc., 800 N. Five Points Road, West Chester, PA 19380, USA

12:10 pm **Case Study: Separation and Purification of Two Chiral Discovery Compounds using Kromasil CSPs, The Influence of Particle Size on Process Productivity in Chiral Batch Chromatography.** Joakim Högblom, Sylvia Winkel Pettersson, Britt Kofoed-Hansen, Akzo Nobel, Separation Products, SE-445 80 Bohus, SWEDEN

12:30–2:00 pm **PAUSE, EXHIBITS, POSTERS, VENDOR WORKSHOPS**
Location of Exhibits and Posters: Millennium Ballroom, 2nd floor

12:45–2:00 pm **Free Vendor Workshop sponsored by Chiral Technologies**

12:45–2:00 pm **Free Vendor Workshops to be announced**

2:00–3:25 pm **POSTER SESSION II** (Location: Millennium Ballroom, 2nd floor)

Tuesday, May 11, 2010

7. SMALL SCALE SEPARATIONS

3:30 pm **Strategic Use of Semipreparative Supercritical Fluid Chromatography (SFC) to Enable Pharmaceutical Lead Optimization and Early Development.** Regina Black, Preparative Chemistry and Separations, Merck and Co., Rahway, NJ, USA

3:50 pm **Large Scale Chiral Chromatography for the Separation of an Enantiomer to Accelerate Drug Development.** Leo C. Hsu, Hyunjung Kim, Xiqin Yang, David Ross, GlaxoSmithKline, King of Prussia, PA 19406, USA

4:10 pm **Preparative Liquid Chromatography for Compound Purification and Separation in Medicinal Chemistry.** Ulrich Emde, Melanie Dietz, Dieter Spuck, Merck KGaA, Darmstadt; Merck Serono, MS-RTC-MLF2, Frankfurter Str. 250, D-64293 Darmstadt, GERMANY

4:30 pm **Rescue Chromatography: Development of a Purification Process to Recover an Intermediate from Mother Liquor.** Andrew Hessler, Xiqin Yang, David Thornton, Leo Hsu, Chemical Development, GlaxoSmithKline, 709 Swedeland Road, King of Prussia, PA 19406, USA

4:50 pm **PAUSE**

8. SMALL SCALE SEPARATIONS

5:10 pm **Make 'em All and Let Preparative Chromatography Sort It Out: Strategies for Highly Productive Multikilogram HPLC Purification of a Single Compound from a Multicomponent Sample Mixture.** David J. Schenk, Christopher J. Welch, Derek W. Henderson, Separation & Purification Center of Excellence, Department of Process Research, Merck & Co., Inc., Rahway, NJ 07065, USA

5:30 pm **S.M.A.R.T. Software; A Solution to the Collection, Organization, and Distribution of Data to Efficiently Manage a High-Throughput Purification and Analysis Lab.** William Leister, Chris Louer, NIH Chemical Genomics Center, National Human Genome Research Institute, National Institutes of Health, 9800 Medical Center Drive, Rockville, MD 20850, USA

5:50 pm **Parallel Chromatography in 96-Well Formatted MiniColumns in Multi-Step Protein Purification Process Development.** Tim Schroeder, Jürgen Friedle, Atoll GmbH, Ettishofer Straße 10, D-88250 Weingarten, Germany, Irina Kostareva, Atoll-Bio USA, P.O.Box 630171, Riverdale, NY 10463, USA

6:10 pm **PAUSE**

Wednesday, May 12, 2010

8:50 am **PRESENTATION OF AWARDS TO WINNERS OF THE BEST POSTER COMPETITION**

9. FUNDAMENTALS

9:00 am **A Novel Optimization Strategy for Incorporating of Additives in the Modelling Aimed at Improved Process Optimization.** Torgny Fornstedt, Lena Edström, Torgny Undin, Patrik Forssén, Department of Physical and Analytical Chemistry, Uppsala University, BMC Box 599, SE-751 24, Uppsala, SWEDEN

9:20 am **Peak Parking Method for Measurement of Molecular Diffusivity in Liquid Phase Systems.** Kanji Miyabe, Graduate School of Science and Engineering for Research, University of Toyama, 3190, Gofuku, Toyama 930-8555, JAPAN

9:40 am **Optimum Experimental Conditions in Preparative Chromatography. The Effect of the Amount of Packing Material.** Attila Felinger, Department of Analytical and Environmental Chemistry, University of Pecs, Pecs, Ifjusag utja 6, H-7624, HUNGARY

10:00 am **Energetics of Lysozyme Adsorption onto Mesoporous Silica.** Rebecca J. Desch, Stephen W. Thiel, Neville G. Pinto, Department of Chemical and Materials Engineering, University of Cincinnati, Cincinnati, OH 45221-0012, USA

10:20 am **Measurement and Analysis of Cooperative Adsorption Isotherms of Binaphthol Enantiomers on Chiralpack AD.** Ricardo J. S. Silva, Rui C. R. Rodrigues, José P. B. Mota, Requimte/CQFB, Departamento de Química, Faculdade de Cências e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica, PORTUGAL

10:40 am **PAUSE**

Wednesday, May 12, 2010

10. PROCESSES

11:10 am **Development of a Preparative Ion Exchange Process for the Separation of Glycosylated Whey Peptides using Membrane Adsorption Chromatography.** Markus Kreuss, Elena Leeb, Ulrich Kulozik, Technische Universität München, Chair for Food Process Engineering and Dairy Technology, Weihenstephaner Berg 1, D-85354 Freising, GERMANY

11:30 am **A New Multicolumn, Open-Loop Process For Ternary Separation By Solvent-Gradient Chromatography.** José P. B. Mota[1], Rui C. R. Rodrigues[1], Ricardo J. S. Silva[1], H. Osuna-Sanchez[2], E. Valéry[2], [1]Requimte/CQFB, Departamento de Química, Faculdade de Cências e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica, PORTUGAL; [2]NovaSep Process, Boulevard de la Moselle, BP 50 - 54340 Pompey, FRANCE

11:50 am **Steady State Recycling Chromatography – Simplified Optimal Design and Options for Process Improvement.** Malte Kaspereit[1], Tuomo Sainio[2], Achim Kienle[1,3], [1]Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, GERMANY; [2]Laboratory of Industrial Chemistry, Lappeenranta University of Technology, Lappeenranta, FINLAND; [3]Otto-von-Guericke University Magdeburg, Chair for Automation/Modeling, Magdeburg, GERMANY

12:10 pm **The Influence of the Memory Effect on Method Development using the CHIRALPAK® AD®.** Joel Putnam, Georges Guiochon, Department of Chemistry, University of Tennessee, Knoxville, TN 37996-1600, USA and Oak Ridge National Laboratory, Oak Ridge, TN, USA

12:30–2:00 pm **PAUSE**

12:45–2:00 pm **Free Vendor Workshop to be announced**

11. NEW STATIONARY PHASES

2:00 pm **Comparison of Protein A Affinity Chromatography Media: An Update.** Alexander Matlschweiger[1], Alois Jungbauer[1], Rainer Hahn[1], [1]Department of Biotechnology, University of Natural Resources and Applied Life Science Vienna, Muthgasse 18, 1190 Vienna, AUSTRIA

2:20 pm **Developments of Hydrophilic Polymer-based Ion Exchange Media and New Generation Reversed Phase Packing Materials for Separation of Peptide and Protein.** Ernest J. Sobkow[1], Masakatsu Omote[2], Takatomo Takai[2], Kiyoshi Morishita[2], Noriko Shoji[2], Naohiro Kuriyama[2], [1]YMC America, Inc, Allentown, PA, USA; [2]YMC Co. Ltd., Ishikawa, JAPAN

2:40 pm **Salt Tolerant Adsorbents for Process Chromatography. Approaches to Improve Process Throughput and Productivity.** Peter R. Levison[1], Philippe Despres[2], [1]Pall Life Sciences, Walton Road, Portsmouth, Hampshire, PO6 1TD, UK; [2]Pall France, 48 Avenue des Genottes, 95800 Cergy-Saint-Christophe, FRANCE

3:00 pm **Convenient Purification of Highly Polar Compounds by New Amide-based Stationary Phases.** Jerry Wang, Agela Technologies, Inc., 625 Dawson Drive, Newark, DE 19713, USA

3:20 pm **ADJOURN**

Poster Presentations

Location: Millennium Hall, 2nd floor

Session Times: 2:00 – 3:25 PM

All posters will remain up for viewing all day Monday and Tuesday. All posters should be mounted onto the poster boards on Monday between 8:30 AM and 1:00 PM and not be removed until Tuesday between 3:25 PM and 5:00 PM (anything remaining after 6:00 PM on Tuesday will be discarded).
See "Poster Guidelines" at www.PREPsymposium.org

Preparative Scale Fractionation of Poly(ε-caprolactone) Block Copolymers and Their Identification by Liquid Chromatography and MALDI-TOF-MS. Hasnat Ahmed, Bernd Trathnigg, C. Oliver Kappe, Robert Saf, Institute of Chemistry, Karl Franzens University Graz, Heinrichstrasse 28, A-8010 Graz, AUSTRIA

Thick Shear Mode Acoustic Devices to Study Biomolecular Recognition and Protein Binding. Luis F. M. Rosa, Jorge Carvalho, Rogério Rodrigues, Guilherme N. M. Ferreira, IBB-Institute for Biotechnology and Bioengineering, Centre for Molecular and Structural Biomedicine, Universidade do Algarve, Faro, PORTUGAL

Methods for Improving Synthetic Peptide Isolation. Jo-Ann M. Jablonski, Thomas E. Wheat, Kenneth J. Fountain, Steven M. Collier, Waters Corporation, 34 Maple Street, Milford, MA 01757, USA

Characterization of Commercial Polymeric Surfactants by Offline Two Dimensional Liquid Chromatography. Shazia Abrar (Mag), Bernd Trathnigg, Central Polymer Lab, Institute of Chemistry, Karl-Franzens University of Graz, Heinrichstraße 28**,** A-8010 Graz, AUSTRIA

Investigation of the Use of Room Temperature Ionic Liquids as Organic Mobile Phase Replacements for Reversed-phase Liquid Chromatography. Tarab Ahmad[a], Divya Shekar[a], Vijaya sree Vegesna[a], Prashanthi Kolanupaka[a], Tariq Z. Ahmad[b], [a]Department of Chemistry, Western Illinois University, Macomb, IL, USA; [b]Macomb Senior High School, Macomb, IL, USA

Model for Distributed Pore Volumes. Niklas Borg, Karin Westerberg, Niklas Andersson, Bernt Nilsson, Department of Chemical Engineering, Lund University, P.O. Box 124, SE-221 00 Lund, SWEDEN

Chromatographic Purification of Single-chain Fragment Variable Antibodies. Carlos Martínez Cristancho[1], Andreas Seidel-Morgenstern[1,2], [1]Max-Planck-Institut for Dynamics of Complex Technical Systems, Magdeburg, GERMANY; [2]Chair of Chemical Process Engineering, Otto-von-Guericke University, Magdeburg, GERMANY

Solid-phase Extraction of Liquiritin and Glycyrrhizic Acid from Licorice using Ionic Liquid-based Silica. Minglei Tian, Kyung Ho Row, Department of Chemical Engineering, Inha University, Incheon 402-751, KOREA

Evaluation of Various Types of Stationary Phases for Peptides Separation in RP-HPLC. Akira Sugisaki[1], Yuji Kirino[1], Masahide Takase[2], [1]DAISO Fine Chem USA Inc., Santa Clara, CA 95054, USA; [2]DAISO CO., LTD., Osaka, JAPAN

The Development of a Highly Productive Preparative Chromatography Process for a Regioisomer Separation. Sheng Tang, Xiqin Yang, Andrew Hessler, Leo Hsu, Chemical Development, GlaxoSmithKline, 709 Swedeland Road, King of Prussia, PA 19406, USA

Preparative Chromatography for Purification of Immunosuppressants. Nitin S. Patil, Rakesh B. Mendhe, Rupali Desai, Harish V. Iyer, Biocon Limited, 20th KM, Hosur Road, Electronics City, Bangalore 560 100, INDIA

Effect of Hydrophobicity Index and Charged State of Peptides on their Preparative Purification. Nitin S. Patil, Rakesh B. Mendhe, Shrivallabh B. Desai, Ganesh R. Iyer, T. Srinivasa, Harish V. Iyer, Biocon Limited, 20th KM, Hosur Road, Electronics City, Bangalore 560 100, INDIA

A Newly Developed Hydrophilic Polymer-based Ion Exchange Chromatography Media and Purification for Immunoglobulin Y from Egg Yolk. Masakatsu Omote, Noriko Shoji, Naohiro Kuriyama, YMC Co. Ltd., Ishikawa, JAPAN

Packing Materials with Advanced Technologies (High Strength, Modified Silica Gel Design) for Preparative HPLC Separation of Peptide and Protein. Masakatsu Omote, Takatomo Takai, Noriko Shoji, Naohiro Kuriyama, YMC Co. Ltd., Ishikawa, JAPAN

A Quantitative Measurement of 5'-methylthioadenosine *in-vitro* using Liquid Chromatography–tandem Mass Spectrometry. Yibai Chen, Baiqing Tang, Warren Kruger, Anthony Yeung, Fox Chase Cancer Center, 333 Cottman Avenue, Philadelphia, PA 19111, USA

Easy Method Transfer Using a Universal, Sub 2μm to 10μm HPLC Media Platform. Sue Diaz, Karin Hallberg, Reno Nguyen, Scott Anderson, Laura Kaepplinger, Grace Discovery Sciences, 2051 Waukegan Road, Deerfield, IL 60015, USA

Measurement of TS-131, A New Monopyridinium Oxime, by High Performance Liquid Chromatography in Rat Plasma Samples. Zeki Ilker Kunak[a], Emin Ozgur Akgul[b], Hakan Yaren[a], Tuncer Cayci[b], Yasemin Gulcan Kurt[b], Ibrahim Aydin[b], Halil Yaman[b], Levent Kenar[a], Tuna Subasi[c], Erdinc Cakir[b], Enis Macit[d], Ayhan Sitki Demir[c], Mehmet Kemal Erbil[b], Jana Zdarova Karasova[e], [a]Department of Medical CBRN, Gulhane Military Medical Academy, Ankara, TURKEY; [b]Department of Medical Biochemistry, Gulhane Military Medical Academy, Ankara, TURKEY; [c]Department of Chemistry, Middle East Technical University, Ankara, TURKEY; [d]Department of Analytical Toxicology, Gulhane Military Medical Academy, Ankara, TURKEY; [e]Department of Toxicology, Faculty of Military Health Sciences, Hradec Kralove, CZECH REPUBLIC

Hemoglobinopathies Prevalence in the Universidad Santiago de Cali Afrocolombian Population. X. Gonzalez Rojas[1], H. Caicedo Villegas[1], A. Sanchez Mosquera[1], C. Escarpetta[1], C. Lasso[1], J. M. Satizabal Soto[1,2], Armando Lucumi-Moreno[1], [1]Universidad Santiago de Cali, Cali-Valle, COLOMBIA; [2]Universidad Del Valle, Cali-Valle, COLOMBIA

Protective Effects of Antioxidants on Chronic Ethanol-induced Brain Damage. Enis Macit[1], I. Tayfun Uzbay[2], Z. Ilker Kunak[3], [1]Gulhane Military School of Medicine, Dept. of Toxicology, Ankara, TURKEY; [2]Gulhane Military School of Medicine, Dept. of Pharmacology, Ankara, TURKEY; [3]Gulhane Military School of Medicine, Dept. of NBC, Ankara, TURKEY

Effect of High pH Column Regeneration on the Separation Performances in Reversed-phase Chromatography of Peptides. David Gétaz**, Mumun Gençoglu**, Nicola Forrer*, Trevor Hopkins*, Massimo Morbidelli**, *Zeochem AG, 8707 Uetikon, SWITZERLAND; **ETH Zürich, 8093 Zürich, SWITZERLAND

Preparation of Ioversol with Cheetah Flash Chromatography System and Hydrophilic Silic-bond C18 Packing Material. Wan Wang, Qunjie Wang, Agela Technologies, Inc., 625 Dawson Drive, Newark, DE 19713, USA

Comparison of Protein A Affinity Chromatography Media: An Update. Alexander Matlschweiger[1], Alois Jungbauer[1], Rainer Hahn[1], [1]Department of Biotechnology, University of Natural Resources and Applied Life Science Vienna, Muthgasse 18, 1190 Vienna, AUSTRIA

Separation and Quantitation of Anions in Different brands of Toothpaste in India by using Ion Chromatography. Shrikant R. Kulkarni, Manasi V. Ghamande, Department of Chemical Engineering, Vishwakarma Institute of Technology, Pune 411 037 (M.S.), INDIA

High Throughput Screening in Downstream Process Development for an Insect Cell Line-Derived Antigen. Doug MacDonald, Heather Hudson, Steve Meyer, Dendreon, Protein Process Development, Seattle, WA, USA

Martin-Synge Algorithm for the Solution of Equilibrium-dispersive Model of Liquid Chromatography. Krisztian Horvath[1,2], Jacob N. Fairchild[1], Krzysztof Kaczmarski[3], Georges Guiochon[1], [1]University of Tennessee, Department of Chemistry, Knoxville, TN, 37996-1600, USA; [2]University of Pannonia, Department of Analytical Chemistry, P.O. Box 158, Veszprem, H-8200, HUNGARY; [3]Rzeszow University of Technology, Department of Chemical and Process Engineering, 35-959, Rzeszow, POLAND