

# 5TH DRESDEN SYMPOSIUM ON AUTOANTIBODIES

Dresden, 18.-21. Oktober 2000

## Ort der Veranstaltung:

Hotel Westin Bellevue Dresden  
Große Meissner Straße 15, 01097 Dresden

**Teilnehmer:** 247 aus 22 Ländern

Schwerpunkte des 5th Dresden Symposium on Autoantibodies waren Struktur und Funktion von Autoantigenen, die Bedeutung von Autoantigenen und Autoantikörpern in der Pathogenese sowie die Induktion von Autoantikörpern. Weiterhin wurden neue Ergebnisse zu Autoantikörpern bei rheumatoider Arthritis (RA), Anti-Phospholipid-Syndrom, Arteriosklerose sowie Darm- und Lebererkrankungen präsentiert. Erstmals wurden CCP-Antikörper und ASCA als neue diagnostische Marker bei der RA und beim Morbus Crohn vorgestellt. Die Ergebnisse des Symposiums wurden ausführlich auch im Buch „Autoantigens and Autoantibodies: Diagnostic Tools and Clues to Understanding Autoimmunity“ (eds. K. Conrad, R.L. Humbel, M. Meurer, Y. Shoenfeld, E.M. Tan; Pabst Science Publishers, Lengerich 2000) vorgestellt.

## Sponsoren

s. Programm

## Referenten/Vorträge

s. Programm

# 5<sup>TH</sup> DRESDEN SYMPOSIUM ON AUTOANTIBODIES

18<sup>th</sup> – 21<sup>st</sup> October 2000



Final Programme

Dear Madam, dear Sir,

On behalf of the Organizing Committee and the International Advisory Board it is a great pleasure for me to welcome you in Dresden to the 5<sup>th</sup> Dresden Symposium on Autoantibodies.

One decade ago, we realized the First Dresden Symposium on Autoantibodies, just one week after the re-unification of Germany. Clinicians and scientists from the Eastern and the Western part of Germany, Austria and Luxembourg discussed mainly methodical aspects of the autoantibody determination but also the clinical and pathogenic relevance of autoantibodies. The topics of the Second Symposium in April 1993 dealt mainly with diagnostic aspects. The Third Symposium in September 1996 was a turning point in such way that we realized the first international meeting with participants from 14 countries. Besides general aspects like methods and clinical relevance, the role of pathogenic idiotypes and exogeneous factors in autoimmunity was discussed. Following the success of this symposium we decided to continue these series of International Autoantibody Symposia in Dresden. The main purpose of these meetings is to provide a podium for clinicians and scientists specialising in „autoimmunology“ to exchange academic informations and to present and discuss the results of basic and applied research on autoantigens, autoantibodies and autoimmunity. The Fourth Symposium in October 1998 followed this concept. Autoantibodies and tumors was one of the topics of this meeting.

The research on genomics and proteomics leads to growing insights into the structure and function of autoantigens as well as into processes of the induction, diversification and pathogenic effects of autoimmune responses. In addition, more and more autoantigens and autoantibodies of potential diagnostic or pathogenic relevance were identified. We will continue the fruitful discussion on autoantigens and autoantibodies as clues to understanding autoimmunity and as tools in prediction, diagnosis and prognosis of autoimmune and other diseases.

I hope this meeting will be a success and that all participants will have an enjoyable stay in Dresden.

Karsten Conrad

**8.15 WELCOME AND INTRODUCTIONS**

**8.30-10.30 AUTOANTIGENS – STRUCTURE, FUNCTION AND ROLE IN THE PATHOGENESIS OF AUTOIMMUNE DISEASES – PART I**

Co-Chairs: E.M. Tan (La Jolla, USA)  
Y. Takasaki (Tokyo, Japan)

- 8.30 The particle nature of intracellular autoantigens  
*F. Hiepe (Berlin, Germany)*
- 9.00 Antigenicity, structure and function of the Sm protein family  
*T. Achsel, H. Brahms, R. Lührmann (Göttingen, Germany)*
- 9.30 Autoantigenic complexes in the nucleolus of human cells  
*G. Pruijn (Nijmegen, The Netherlands)*
- 10.00 Autoantibodies to the mitotic apparatus: biological breakthroughs, clinical application, etiological complexity  
*M. Fritzler, J.B. Rattner (Calgary, Canada)*

10.30-11.00 COFFEE BREAK – POSTER AND EXHIBITION VIEWING

**11.00-13.30 AUTOANTIGENS – STRUCTURE, FUNCTION AND ROLE IN THE PATHOGENESIS OF AUTOIMMUNE DISEASES – PART II**

Co-Chairs: M. Bachmann (Oklahoma City, USA)  
F. Hiepe (Berlin, Germany)

- 11.00 Detection of novel autoantigens by SEREX  
*M. Pfeundsich (Homburg, Germany)*
- 11.30 Autoantibodies to aberrantly regulated mRNA binding proteins in cancer  
*E.M. Tan, M. Lu, J.-Y. Zhang, E.K.L. Chan (La Jolla, USA)*
- 11.50 Autoantibodies to PCNA and Ki - a linked set of autoimmune response associated with cellular function of target antigens  
*Y. Takasaki (Tokyo, Japan)*

CBP/p300 and RNA-polymerase II colocalize in transcriptionally active domains in the nucleus <i>A. von Mikecz, S. Zhang, M. Montminy, E.M. Tan, P. Hemmerich (Düsseldorf, Germany)</i>	12.10
LEDGF, a novel autoantigen with putative growth factor and survival activities that is cleaved by caspases 3 and 7 during apoptosis <i>C. Casiano, C. Molinaro, T. Daniels, X. Wu (Loma Linda, USA)</i>	12.30
Description of a novel human protein, LaXp180, with homologies to the nuclear autoantigen La/SS-B, B1 Laminin and the protooncogene Stathmin <i>M. Bachmann, J. Laubinger, M. Schmitz, K. Conrad, E.P. Rieber (Oklahoma City, USA)</i>	12.50
Calcium ion mediated protein-protein interaction in the 60 kD Ro ribonucleo-protein particle <i>B.T. Kurien, R.H. Scofield, J.B. Harley, M. Bachmann (Oklahoma City, USA)</i>	13.10
LUNCH BREAK – POSTER AND EXHIBITION VIEWING	13.30–14.30
<b>Poster</b>	
Development of diagnostic marker peptides for autoimmune diseases using synthetic peptide libraries <i>M.A.M. van Boekel, J.W. Drijfhout, W.J. van Venrooij (Nijmegen, The Netherlands)</i>	P1
Identification of cation-independent mannose 6-phosphate receptor as a novel autoantigen by human monoclonal antibodies <i>D. Tarragó, I. Aguilera, L. Wichmann, J. Melero, A. Núñez-Roldán, B. Sánchez (Sevilla, Spain)</i>	P2
Attempt for the detection of novel autoantigens in rheumatic and infectious diseases <i>V. Schöllhorn, E. Stechemesser (Straßberg, Germany)</i>	P3

**14.30–16.20 MECHANISMS OF AUTOANTIBODY INDUCTION**

Co-Chairs: C. Casiano (Loma Linda, USA)  
G. Puijn (Nijmegen, The Netherlands)

**Main Lectures**

- 14.30 The potential contribution of various cell death pathways to the initiation of autoantibody responses  
*C. Casiano (Loma Linda, USA)*
- 15.10 Somatic mutations, a mechanism for induction of autoantibodies?  
*M. Bachmann (Oklahoma City, USA)*

**Short Lectures**

- 15.50 Autoimmunity to the p53 protein is a feature of systemic lupus erythematosus (SLE) related to anti-DNA antibodies  
*J. Herkel, A. Mimran, N. Erez-Alon, V. Rotter, I.R. Cohen (Mainz, Germany)*
- 16.05 Autoantigens of systemic rheumatic diseases are processed via proteasomes  
*T.D. Rockel, M. Chen, B. Dahlmann, P. Hemmerich, A. von Mikecz (Düsseldorf, Germany)*
- 16.20–16.50 COFFEE BREAK – POSTER AND EXHIBITION VIEWING

**Poster**

- P4 Adoptive transfer of anti-La T-cells into human-La transgenic mice: Comparison of transgenic monoclonal anti-La antibodies with self- and non-self anti-La monoclonal antibodies of hyperimmunized mice  
*M. Bochmann, D. Farris, K.M. Kaufman, U. Drathen, C. Schörner, J. Gross, T. Gross, J.A. James, J.B. Harley (Oklahoma City, USA)*
- P5 Immunization with 60kd Ro peptide leads to a diversified immune response to multiple lupus autoantigens  
*M.T. McClain, R.H. Scofield, T.F. Gross, B.T. Kurien, J.A. James (Oklahoma City, USA)*
- P6 Fine specificity mapping of anti-nRNP monoclonal antibodies  
*C.S. Lutz, J.B. Harley, M.T. McClain, J.A. James (Newark, USA)*

Fine specificity mapping of the lupus anti-Sm D2 and D3 autoimmune response and correlation with crystalline structure  
P7  
*M.T. McClain, K.M. Kaufman, J.B. Harley, J.A. James (Oklahoma City, USA)*

A new allele of transporter associated with antigen processing gene (*TAP2\*Bky2*) and glutathione S-transferase (GST) M1 homozygous null genotype were associated with anti-Ro/SS-A autoantibody production  
P8  
*S. Kumagai, S. Kanagawa, A. Morinobu, M. Koshiba, S. Maekawa, N. Hayashi, S. Sugai, S. Miyagawa (Kobe, Japan)*

**PATHOGENIC EFFECTS OF AUTOANTIBODIES** **16.50-19.20**

Co-Chairs: A. Kromminga (Hamburg, Germany)  
P.L. Meroni (Milan, Italy)

**Main Lectures**

The pathogenic role of autoantibodies in the genesis of autoimmune diseases  
16.50  
*A. Kromminga (Hamburg, Germany)*

Pathogenicity of anti-endothelial cell antibodies (AECA)  
17.20  
*P.L. Meroni (Milan, Italy)*

**Short Lectures**

Anti-PF4/heparin antibodies from patients with heparin induced thrombo-cytopenia and antiendothelial cell antibodies from patients with thrombotic thrombocytopenic purpura cause direct activation of microvascular endothelial cells  
17.50  
*S. Praprotnik, M. Blank, P.L. Meroni, Y. Shoenfeld (Ljubljana, Slovenia)*

Stimulatory autoantibodies against the angiotensin II AT1-receptor in patients with preeclampsia and HELLP syndrome  
18.05  
*G. Wallukat, R. Dechend, V. Hohmuth, T. Fischer, D. Neichel, E. Nissen, F.C. Luft (Berlin, Germany)*

Autoantibodies against the serotonergic 5-HT4 receptor may be pathogenic in neonatal lupus  
18.20  
*J. Hoebeke, P. Eftekhari (Strasbourg, France)*

- 18.35 Antibodies from serum of patients with dilated cardiomyopathy prolong action potential duration and increase contraction amplitudes in rat ventricular myocytes  
*T. Christ, E. Wettwer, H.M. Himmel, E. Adolph, G. Wallukat, U. Ravens (Dresden, Germany)*
- 18.50 Does the nuclear autoantigen La/SS-B function by binding/chelating divalent cations?  
*M. Bachmann, B.T. Kurien, C. Schörner, J. Gross, T. Gross, J.A. James, R.H. Scofield, J.B. Harley (Oklahoma City, USA)*
- 19.05 The IL-8 Release from human cultured keratinocytes, mediated by autoantibodies to the 180 kD bullous pemphigoid antigen, is inhibited by Dapsone  
*E. Schmidt, S. Reimer, N. Kruse, S. Jainta, E.-B. Bröcker, D. Zillikens (Würzburg, Germany)*

**Poster**

- P9 Association of anti-Ro antibodies and neutropenia in neonatal Lupus  
*S. Kanagasegar, R. Cimaz, B.T. Kurien, A. Brucato, R.H. Scofield (Oklahoma City, USA)*
- P10 Autoantibody enhanced tissue damage caused by oxygen radicals in infectious mononucleosis  
*A. Dalpke, L. Schaade, K. Ritter (Aachen, Germany)*

**20.00 WELCOME RECEPTION**

**NOVEL AUTOANTIBODIES OF DIAGNOSTIC AND/OR PATHOGENIC RELEVANCE**

**8.30–10.30**

Co-Chairs: M. Fritzler (Calgary, Canada)  
R.L. Humbel (Luxembourg)

**Main Lectures**

Phage display as a tool to study the human autoantibody repertoire in systemic autoimmune diseases 8.30  
*J. Raats (Nijmegen, The Netherlands)*

Identification of cancer related autoantibodies by SEREX 8.55  
*U. Sahin, O. Türeci (Mainz, Germany)*

**Short Lectures**

Spectrum of human autoantibodies to Golgi complex and endosome antigens 9.20  
*E.K.L. Chan, M.L. Fritzler (Calgary, Canada)*

Western immunoblot method of detecting anti-68Kd antibodies associated with autoimmune hearing loss 9.30  
*V. Kumar, C. Zhu, N. Cook, M. Rajadhyaksho (Amherst, USA)*

Autoantibodies to receptor-induced neopeptides of fibrinolytic proteins in rheumatic and vascular diseases. 9.40  
*I. García-De Lo Torre, M. Domínguez, P. Cacoub, J.-C. Piette, M. Salazar-Páramo, P. Godeau, E. Anglés-Cano (Guadalajara, Mexico)*

Antibodies recognizing transcription intermediary factor-1 $\beta$ , or hexokinase 1, in four family members of a scleroderma patient 9.50  
*G.R. Harvey, J. Dixey, N.I. McHugh (Bath, UK)*

Description of antibodies to oxidized forms of the autoantigen La/SS-B 10.00  
*S. Kanagasegar, B.T. Kurien, H. Deister, K. Conrad, R.J. Gross, T. Gross, J.A. James, R.H. Scofield, J.B. Harley, M. Boehmann (Oklahoma City, USA)*

Antibodies against superoxide dismutase and oxidative injury in systemic lupus erythematosus 10.10  
*R.H. Scofield, B.T. Kurien (Oklahoma City, USA)*

**Poster**

- P11 Detection of antibodies to innerear  
*P. Schmit, V. Pierrard, R.L. Humbel (Luxembourg)*
- P12 Identification of the heterogeneous nuclear ribonucleoprotein K (hnRNP-K) as a novel autoantigen in SLE  
*S. Hayer, G. Fabini, K. Scriver, C. Zimmermann, G. Steiner (Vienna, Austria)*
- P13 Antibodies against inhibitor of apoptosis protein survivin: a novel diagnostic marker of cancer?  
*J. Rohayem, P. Diestelkötter, B. Weigle, M. Schmitz, K. Conrad, J. Mehlhorn, E.P. Rieber (Dresden, Germany)*
- P14 Role of autoantibodies in q fever. Relationship with chronic disease  
*J. Segui, M.T. Camacho, B. Bustillo, A. Tellez, I. Outschoorn, J. Gonzalez, J.M. Vazquez, A.I. Marina, A. Sobrado, M.A. San Martín, I. Terol (Madrid, Spain)*

10.20–11.00 COFFEE BREAK – POSTER AND EXHIBITION VIEWING

**11.00–12.50 AUTOIMMUNITY IN ANTI-PHOSPHOLIPID SYNDROME AND ATHEROSCLEROSIS**

Co-Chairs: T. Koike (Sapporo, Japan)  
Y. Shoenfeld (Tel Hashomer, Israel)

**Main Lectures**

- 11.00 Atherosclerosis as an autoimmune disease – Autoantigens, autoantibodies and immunomodulation  
*Y. Shoenfeld (Tel Hashomer, Israel)*
- 11.35 Anticardiolipin antibody, thrombosis and atherosclerosis  
*T. Koike (Sapporo, Japan)*

**Short Lectures**

- 12.05 Differential linear epitope binding of natural and SLE autoantibodies to HDL apolipoprotein A-1  
*H.M. Cheng, S.L. Tung, C.K. Sam (Kuala Lumpur, Malaysia)*
- 12.20 Could anti-beta<sub>2</sub>-glycoprotein I antibody (αβ<sub>2</sub>-GPI) investigation substitute for that of anticardiolipin antibodies (αCL) in the exploration of antiphospholipid syndrome (APS)?  
*P. Roll, M. San Marco and GEAI (Groupe d'étude de l'autoimmunité) (Marseille, France)*

Clinical reliability of antiphospholipide autoantibodies (APA) in the diagnosis of acute cerebrovascular processes <i>U. Sack, J. Förster, F. Emmrich, M. Kamprad (Leipzig, Germany)</i>	12.35
<b>Poster</b>	
Evaluation study on a new anti- $\beta_2$ -glycoprotein I screening EIA <i>B. Gilburd, L. Rauovo, Y. Neshet, Y. Shoenfeld (Tel Hashomer, Israel)</i>	P15
Comparing different anti-cardiolipin- and anti- $\beta_2$ -glycoprotein-I antibody ELISA in autoimmune diseases <i>R. Wöhrlé, T. Matthias, P. von Landenberg, M. Oppermann, K. Helmke, F. Förger (München, Germany)</i>	P16
Autoantibodies against low density lipoproteins in patients with hyperlipoproteinemia <i>L. Fialová, L. Mikulíková, M. Zeman, A. Zák, E. Tvrzická, M. Buchtíková, B. Stanková, I. Matous-Malbohan (Prague, Czech Republic)</i>	P17
A novel assay for the measurement of anti-cardiolipin antibodies using a combination of synthetic cardiolipin and human $\beta_2$ -glycoprotein I <i>R. Seaton, A. Vasishta (Dundee, UK)</i>	P18
Comparison of different commercial kits for the quantification of anti-cardiolipin and anti- $\beta_2$ -glycoprotein I antibodies <i>M. Komprad, J. Förster, F. Emmrich, U. Sack (Leipzig, Germany)</i>	P19
Autoantibodies against oxidized low density lipoproteins and anti- $\beta_2$ -glycoprotein I in pregnant women <i>I. Matous-Malbohan, L. Fialová, L. Mikulíková, T. Zima, O. Benesová, A. Zwinger (Prague, Czech republic)</i>	P20
Antibodies against oxidized low density lipoproteins and phospholipids in patients with renal disorders <i>I. Matous-Malbohan, L. Fialová, L. Mikulíková, T. Zima, V. Tesar, M. Merta (Prague, Czech Republic)</i>	P21
An enzyme immunoassay for the detection of antibodies to oxidized low density lipoproteins <i>V. Kumar, J. Schwartz, V. Ramsperger, M. Rajadhyaksha (Amherst, USA)</i>	P22
LUNCH BREAK – POSTER AND EXHIBITION VIEWING	12.50–14.00

**14.00–17.15 AUTOIMMUNITY IN RHEUMATOID ARTHRITIS**

Co-Chairs: G.R. Burmester (Berlin, Germany)  
G. Steiner (Vienna, Austria)

**Main Lectures**

- 14.00 Cellular autoimmunity in rheumatoid arthritis  
*G. Burmester (Berlin, Germany)*
- 14.30 Autoantibodies and autoreactive T cells in rheumatoid arthritis  
*G. Steiner (Vienna, Austria)*
- 15.00 Autoreactivity profiling in rheumatoid arthritis  
*F. Schumann, S. Behrens, S. Adelt, H. Hofseß, G.R. Burmester, J.M. Engel, S. Bläß (Berlin, Germany)*

15.30–16.00 COFFEE BREAK – POSTER AND EXHIBITION VIEWING

**Short Lectures**

- 16.00 Antibodies to cyclic citrullinated peptide: a highly specific test for rheumatoid arthritis  
*N. Bizzaro, G. Mazzanti, E. Tonutti, D. Villalta, R. Tozzoli (S. Donà di Piave, Italy)*
- 16.15 Anti-filaggrin antibodies detected by line immunoassay: a highly specific marker for rheumatoid arthritis with complementarity to RF  
*A. Union, R. Humbel, K. Conrad, G. Steiner, P. Schmit, A. Vos, S. Dincq, H. Pottel, L. Meheus (Ghent, Belgium)*
- 16.30 Sensitivity and specificity of anti-filaggrin autoantibodies in a cohort of 167 patients with rheumatoid arthritis  
*C. Ferraro-Peyret, J. Tebib, A. Desbos, R. Bihannic, C. Genestier, S. Veber, M.C. Letroublon, J.C. Monier, N. Fabien (Pierre-Bénite, France)*
- 16.45 The stress protein BiP is a major autoantigen in rheumatoid arthritis  
*S. Bläß, A. Union, J. Raymackers, F. Schumann, J.M. Engel, G.R. Burmester (Berlin, Germany)*

**Poster**

- Autoantibodies to denaturated Aldolase A in rheumatoid arthritis  
*P. Schmit, G. Gilson, R.L. Humbel (Luxembourg)* P23
- Rheumatoid factors and autoreactivity against p205 in RA  
*S. Bläß, F. Schumann, J.-M. Engel, G.R. Burmester (Berlin, Germany)* P24
- Measurement of anti-citrullinated peptides antibodies and „anti-keratin“ antibodies. A comparative study.  
*R.L. Humbel, P. Schmit, V. Pierrard, M. Goeury (Luxembourg)* P25
- Evaluation of an enzyme immunoassay for the detection of rheumatoid factors of all antibody isotypes  
*X. Bossuyt, G. Claeys, K.-G. Heide (Bad Bramstedt, Germany)* P26
- Application of the EliSpot method for the analysis of T-cell specific cytokines of patients with rheumatoid and reactive arthritis  
*V. Schöllhorn, R. Preyer (Strassberg, Germany)* P27

**8.30-10.25 AUTOIMMUNITY IN LIVER DISEASES**

Co-Chairs: M.P. Manns (Hannover, Germany)  
E.M. Tan (La Jolla, USA)

**Main Lecture**

- 8.30 Liver diseases: Models to study virus-induced, drug-induced and idiopathic autoimmunity  
*M.P. Manns (Hannover, Germany)*

**Short Lectures**

- 9.00 Hepatic autoantigens in patients with autoimmune polyendocrinopathy-candidiasis-ectodermal dystrophy  
*P. Obermayer-Straub, J. Perheentupa, S. Braun, A. Kayser, A. Barut, S. Loges, A. Harms, G. Dalekos, C.P. Strassburg, M.P. Manns (Hannover, Germany)*
- 9.15 Full-length formiminotransferase cyclodeaminase derived from baculovirus expression is a most suitable target for detecting anti-LC1 autoantibodies in ALH type II  
*Th. Simon, R. Kneusel, R.L. Humbel, P. Schmit, C. Johanet, H. Haubruck, B. Liedvogel (Freiburg, Germany)*
- 9.25 SLA-P35: A cDNA encoding a gene product which specifically recognizes anti-SLA/LP sera from patients with autoimmune hepatitis  
*M. Volkmann, L. Martin, A. Bäurle, H. Heid, C. Strassburg, C. Trautwein, W. Fiehn, M.P. Manns (Heidelberg, Germany)*
- 9.35 Autoantibodies to soluble liver antigen (SLA/LP) recognize at least three independent epitopes within the dominant antigenic region of the SLA/LP protein  
*J. Herkel, B. Heidrich, I. Wies, A.W. Lohse (Mainz, Germany)*
- 9.45 The major autoepitope of LKM1 autoantibodies in autoimmune hepatitis type 2 and in chronic hepatitis C is homologous to other cytochrome p450 autoantigens  
*T. Sugimura, P. Obermayer-Straub, A. Kayser, S. Braun, S. Loges, B. Lüttig, C.P. Strassburg, M.P. Manns (Hannover, Germany)*
- 9.55 A 50 kD myeloid cell-specific, nuclear envelope protein is the predominant target antigen of atypical p-ANCA in autoimmune liver disorders  
*B. Terjung, U. Spengler, T. Sauerbruch, H.J. Worman (New York, USA)*

Frequency of anti-Sp100 antibodies in antinuclear positive sera 10.05  
*R.L. Humbel, C. Johanet, F. Oksman, M. San Marco, A. Escande, N. Olsson and members of the Group for Study of Autoimmunity GEAI, C. Hentschel, W. Schössler (Luxembourg)*

COFFEE BREAK – POSTER AND EXHIBITION VIEWING 10.15–11.30

**Poster**

Establishment of a standardized SLA/LP immunoassay: SLA/LP positive autoimmune hepatitis occurs worldwide P28  
*M. Bares, J. Herkel, I. Wies, S. Kanzler, A.J. Czaja, E.L. Cancado, M. Nishioka, W. Schlumberger, W. Stöcker, A.W. Lohse (Mainz, Germany)*

Heterogeneity of anti-soluble liver antigen autoantibodies targets P29  
*E. Ballot, A. Bruneel, C. Johanet (Paris, France)*

Recombinant SLA/LP increases the sensitivity of an anti-liver-antibody westernblot for the diagnosis of autoimmune hepatitis P30  
*T. Scheper, W. Meyer, A. Lohse, W. Schlumberger, W. Stöcker (Groß Grönau, Germany)*

Kinetics of anti-gp210 antibodies in primary biliary cirrhosis patients with ursodesoxycholic acid therapy P31  
*M. Boissan, E. Ballot, C. Johanet (Paris, France)*

Evaluation of an automated enzyme inhibition assay for the detection of anti-mitochondrial M2 autoantibodies P32  
*P. Schmit, G. Gilson, R.L. Humbel (Luxembourg)*

Clinical correlation of antimitochondrial antibodies P33  
*C. Recktenwald, M.A. Zuber (Leipzig, Germany)*

Nuclear autoantibody profile in patients with liver disorders P34  
*L. Meheus, K. De Bosschere, H. Pottel, I. Peene, F. Hulstaert, F. De Keyser, M.P. Manns (Zwijnaarde, The Netherlands)*

Autoantibody to dihydrolipoamide dehydrogenase (E3) in hepatitis C infection P35  
*Y.-Y. Wu, T.-C. Hsu, T.-C. Liu, T.-Y. Chen, G.L. Tsay (Taichung, Taiwan)*

- P36 Autoimmune hepatitis and hepatitis as part of APECED do not overlap at the genetic level  
*A. Vogel, H. Liermann, A. Harms, C.P. Strassburg, M.P. Manns, P. Obermayer-Straub (Hannover, Germany)*
- P37 Pathogeny of the primary biliary cirrhosis: the participation of endotoxin  
*E. Ballot, O. Bandin, R. Poupon, C. Johanet (Paris, France)*
- P38 Specificity of antinuclear envelope antibodies to glycoprotein GP210 and Lamin-B-Receptor  
*P. Schmit, R.L. Humbel, C. Hentschel, W. Schössler (Luxembourg)*

**11.00–13.05 AUTOIMMUNITY IN GASTROINTESTINAL DISEASES**

Co-Chairs: J. Henker (Dresden, Germany)  
F. Seibold (Bern, Switzerland)

**Main Lectures**

- 11.00 Autoimmunity in chronic inflammatory bowel disease  
*F. Seibold (Bern, Switzerland)*
- 11.30 Immune reactivities in coeliac disease  
*J. Henker, Dresden, Germany*
- 12.00 A new tool to approach the diagnosis of autoimmune enteropathy  
*A.M. Yamamoto, I. Kobayashi, N. Cerf-Bensussan, J.F. Bach, N. Brousse, C. Ricour, O. Goulet (Paris, France)*

**Short Lectures**

- 12.20 Antibody response to dietary and autoantigens in  $\text{Gai}2$  deficient mice with colitis  
*H.H. Uhlig, E. Hultgren Hörnquist, L. Öhman, T. Richter, T. Mothes (Leipzig, Germany)*
- 12.35 Comparative study of ASCA (anti-Saccharomyces cerevisiae antibodies) assays in inflammatory bowel disease (IBD)  
*S. Vermeire, S. Joossens, M. Peeters, G. Marien, X. Bossuyt, R. Vlietinck, P. Rutgeerts (Leuven, The Netherlands)*
- 12.50 Relevance of antibodies against Saccharomyces cerevisiae for the diagnosis of chronic-inflammatory bowel disease  
*B. Zerbe, B. Teegen, C. Dähnrich, W. Schlumberger, E. Müller-Kunert, M. Groeury, R.L. Humbel, W. Stöcker (Groß Grönau)*

LUNCH BREAK – POSTER AND EXHIBITION VIEWING

13.05–14.30

**Poster**

- Autoantibody profiles in patients with inflammatory bowel diseases P39  
*K. Conrad, A. Schäfer, G. Lobeck, H.H. Uhlig, S. Gerdi, J. Henker (Dresden, Germany)*
- Diagnostic value of ASCA and p-ANCA in inflammatory bowel diseases P40  
*K. Malickava, I. Janatkava, T. Fucikova, M. Lukas, S. Adamec (Prague, Czech Republic)*
- Clinical evaluation of recombinant human tissue transglutaminase ELISA for coeliac disease diagnosis P41  
*I. Dahlbom, P. Höpfl, H. Gut, M.-R. Ståhlberg, H. Nurmi, J. Grönlund, M. Viander (Freiburg, Germany)*
- Improvement of celiac disease diagnostics using ELISA with human recombinant tissue transglutaminase as antigen P42  
*P. Höpfl, I. Dahlbom, A.-S. Andersson, H. Gut, B. Backhans, C. Scheckermann, L. Mauch (Freiburg, Germany)*
- Tissue Transglutaminase (tTG) Immunoassays: requirement of specific conditions for the reliable detection of specific autoantibodies P43  
*A. Vigneron, J. Bouvier, V. Vancoppenolle (Mons, Belgium)*
- Human endomysium ELISA as an innovative assay for the diagnosis of coeliac disease P44  
*W. Schlumberger, C. Dähnrich, S. Kardinahl, M. Ossendorf, P. Annis, B. Teegen, E. Müller-Kunert, W. Stöcker (Groß Grönuau, Germany)*
- Recombinant human tissue transglutaminase ELISA for the diagnosis and follow-up of childhood coeliac disease P45  
*T. Hansson, I. Dahlbom, S. Rogberg, B. Backhans, P. Höpfl, H. Gut, A. Dannæus, L. Klareskog (Freiburg, Germany)*
- Diagnosis of celiac disease by ELISA: The importance of the formation of neoepitopes of tissue transglutaminase (tTG) versus the human or guinea pig origin P46  
*A. Maaßen, K. Conrad, T. Porstmann (Dolgenbrodt, Germany)*

- P47 Autoantibodies to tissue transglutaminase (tTG) in primary Sjögren's Syndrome and related rheumatic diseases  
*L.A. Luft, B.J. Miller, R. McKenna, T. Chan, M.J. Fritzler (Calgary, Canada)*
- P48 Helicobacter pylori (Hp) infection in patients with autoimmune gastric disease  
*F. Presotto, B. Sabini, A. Cecchetto, M. Plebani, B. Pedini, F. De Lazzari, C. Betterle (Padova, Italy)*

**14.30-15.30 B AND T CELLS IN AUTOIMMUNITY**

Chair: R.H. Scofield (Oklahoma City, USA)

- 14.30 The role of B cells in autoimmunity  
*A. Radbruch (Berlin, Germany)*
- 15.00 Epitope spreading and maturation of self and non-self reactive B cells in autoimmune patients and experimental animals  
*M. Bachmann (Oklahoma City, USA)*
- 15.15 Disturbed peripheral B lymphocyte homeostasis in SLE  
*M. Odendahl, A. Jacobi, A. Hansen, E. Feist, F. Hiepe, G.R. Burmester, P.E. Lipsky, A. Radbruch, T. Dörner (Berlin, Germany)*

**Poster**

- P49 Cytokine mRNA expression in murine mercury- and silver-induced autoimmunity  
*B. Häggqvist, P. Hultman (Linköping, Sweden)*

15.30-16.00 COFFEE BREAK - POSTER AND EXHIBITION VIEWING

**AUTOIMMUNITY IN NEUROLOGICAL AND PARANEOPLASTIC DISEASES**

**16.00–18.30**

Co-Chairs: J. Dalmau (Little Rock, USA)  
A.J. Steck (Basel, Switzerland)

**Main Lectures**

Clinical and biological aspects of autoantibodies in immune neuropathies 16.00  
*A.J. Steck (Basel, Switzerland)*

Antigens, antibodies and mechanisms of immunity in paraneoplastic disorders of the central nervous system 16.30  
*J. Dalmau (Little Rock, USA)*

Autoimmunity in Stiff-Man syndrome 17.00  
*M. Solimena (New Haven, USA)*

**Short Lectures**

Paraneoplastic anti-Ta and anti-Ma antibody reactivities: an update of 21 patients 17.20  
*R. Voltz, M. Rosenfeld, J. Posner, J. Dalmau (München, Germany)*

Frequency of paraneoplastic autoantibodies and associated neurological and tumor diagnoses 17.35  
*B. De Leeuw, J. Grefkens, H. Hooikaas, P.A.E. Sillevius Smitt (Rotterdam, The Netherlands)*

Flow cytometry as a new method for the detection of surface-binding autoantibodies in autoimmune neuromuscular diseases 17.50  
*F. Blaes, B. Lang, D. Beeson, A. Vincent (Giessen, Germany)*

Problems in the determination of anti-GAD antibodies in Stiff-Man Syndrome 18.05  
*R.L. Humbel, M. Goeury, V. Pierrard, P. Schmit, G. Gilson (Luxembourg)*

Autoantibodies from patients with idiopathic ataxia bind to M-phase phosphoprotein-1 [MPP1] 18.20  
*M.J. Fritzler, S.M. Kerfoot, T.E. Feasby, D.W. Zochodne, J.M. Westendorf, J.O. Dalmau, E.K.L. Chan (Calgary, Canada)*

FRIDAY  
OCTOBER 20TH

**Poster**

- P50 Disturbance in the serum IgG subclass distribution in patients with anti-Hu positive paraneoplastic neurological syndromes  
*M. Klotz, D. Funke, M. Strittmatter, K. Schimrigk, H. Huwer, F. Blaes (Giessen, Germany)*
- P51 EUROLINE Ganglioside Profile: A new membrane test for the detection of autoantibodies against gangliosides  
*W. Meyer, B. Schneider, M. Klotz, W. Schlumberger, W. Stöcker (Groß Schönau, Germany)*

**20.00 SOCIAL DINNER**

**AUTOIMMUNITY IN SKIN DISEASES**

Co-Chairs: M. Meurer (Dresden, Germany)  
G. Messer (Munich, Germany)

**8.30-10.30**

**Main Lectures**

- Autoimmune responses in alopecia, vitiligo and polyglandular autoimmune syndrome 8.30  
*K. Schäkel, M. Meurer (Dresden, Germany)*
- Is Psoriasis an autoimmune disease? 8.50  
*J. Prinz (Munich, Germany)*
- New concepts in the understanding of skin directed autoimmunity 9.10  
*G. Messer (Munich, Germany)*

**Short Lectures**

- Autoantibodies to structural components of the skin induce blisters in patients with autoimmune bullous diseases 9.30  
*C. Sitaru, A. Kromminga, W.H. Boehncke, D. Zillikens (Würzburg, Germany)*
- Enrichment and analysis of memory B-Cells specific for the NC16A domain of the 180kD antigen in bullous pemphigoid patients 9.40  
*H. Leyendeckers, C. König, M. Assenmacher, L. Bruckner-Tuderman, T. Krieg, R. Nischt, J. Schmitz, N. Hunzelmann (Cologne, Germany)*
- Anti-Fibrillin autoantibodies in scleroderma and mixed connective tissue disease 9.50  
*C. Bona (New York, USA)*
- Autoantibodies to the high-affinity IgE receptor in chronic urticaria 10.00  
*M. Sticherling, J. Müller, R. Arndt, E. Christophers, A. Kromminga (Kiel, Germany)*
- Autoantibodies in erythema exsudativum multiforme majus 10.10  
*D. Foedinger (Vienna, Austria)*
- Patients with bullous pemphigoid and linear IgA disease show a dual IgA and IgG autoimmune response to BP180 10.20  
*A. Kromminga, C. Scheckenbach, M. Georgi, C. Hagel, R. Arndt, E. Christophers, E.B. Bröcker, D. Zillikens (Hamburg, Germany)*

10.30–11.00 COFFEE BREAK – POSTER AND EXHIBITION VIEWING

**Poster**

- P52 Coexistence of anti centromere and anti topoisomerase I antibodies in a patient with silica induced scleroderma  
*G.F. Mora, E.M. Rivero, L.M. Cayetti, H.O. Venarotti (Buenos Aires, Argentina)*
- P53 Scl-70 antibodies are highly specific and prevalent in systemic scleroderma (SSc)  
*M. Jarzabek-Chorzelska, W. Meyer, M. Blaszczyk, Z. Kolacinska-Strasz, B. Teegen, S. Jablonska (Groß Grönau, Germany)*
- P54 Detection of autoantibodies in chronic urticaria – Results of an in-patient study at Kiel university  
*M. Sticherling, C. Garrelfs (Kiel, Germany)*
- P55 A new ELISA for the quantitative determination of anti-Desmoglein 1 and 3 antibodies  
*P. Schmit, G. Gilson, R.L. Humbel (Luxembourg)*

**11.00–15.00    METHODICAL ASPECTS  
                  AND DIAGNOSTIC STRATEGIES**

Co-Chairs:   K. Conrad (Dresden, Germany)  
                  R.L. Humbel (Luxembourg)

**Main Lectures**

- 11.00 New developments in autoantibody detection  
*R.L. Humbel (Luxembourg)*
- 11.30 Improved diagnostic performance by determination of defined autoantibody profiles  
*K. Conrad (Dresden, Germany)*
- 12.00 New ways of standardization: Chimeric monoclonal antibodies  
*Th. Simon, N. Joswig, H. Mossmann, R. Kneusel, H.J. Jacobsen, B. Liedvogel, H. Haubruck (Freiburg, Germany)*
- 12.20 The anti-nucleosome autoantibodies: clinical significance and role in the diagnosis of diseases  
*S. Koutouzov, J.-F. Bach, A. Jeronimo, H. Campos, J.-C. Piette, Z. Amoura (Paris, France)*

COFFEE BREAK – POSTER AND EXHIBITION VIEWING 12.40–13.40

**Short Lectures**

- Software-assisted recognition of fluorescent ANA patterns:  
Use for teaching, learning, quality assurance and standardi-  
zation 13.40  
*M. Høier-Madsen, C. Ingwersen, J. Meyrowitsch, P. Charles,  
J. Forslid, A. Wiik (Copenhagen, Denmark)*
- Enzyme immunoassay by a mixture of a nuclear HEp-2 cell  
extract and recombinant proteins is equally or more useful  
than immunofluorescence assay for detection of antinuclear  
antibodies (ANA) 13.55  
*N. Hayashi, T. Kawamata, M. Mukai, A. Morinobu,  
M. Kashiba, S. Kondo, S. Kumagai (Kobe, Japan)*
- Performance of the HYJTECTM Plus, a fully automated EIA  
system for the detection of 29 clinically relevant autoantibo-  
dies 14.10  
*A. Chen, L. Bui, S. Moghaddam, J. Daedelow, K.W. Steffen,  
D. Thear, N. Nayak, K.J. Kontis, U. Schlensog, J. Weston,  
T.M. Li (Garden Grove, California, USA)*
- Clinical usefulness of antibodies to Sm-B/B' UsnRNP poly-  
peptides in CTD patients 14.25  
*A. Ghirardella, A. Doria, S. Zampieri, D. Villalta, R. Tozzoli,  
M. Tonello, T. Del Ross, P.F. Gambari (Padova, Italy)*
- Can fibronectin-IgG-complexes pretend anti-C1q autoanti-  
bodies in patients with SLE? 14.40  
*B. Pfueller, A. Bruns, S. Kuhn, H. Droege, G.-R. Burmester,  
F. Hiepe (Berlin, Germany)*

**Poster**

- P56 Comparative evaluation of two anti-nuclear autoantibody (ANA) detecting assay systems, COBAS® Core HEp2 ANA EIA versus IFA, by an International Consensus Study  
*P.M. Bayer, S. Bauerfeind, J. Bienvenu, B. Fabian, N. Fabien, P.C. Frei, B. Gilburd, K.-G. Heide, M. Hoier-Madsen, P.L. Meroni, J.C. Monier, G. Monneret, P. Panzeri, Y. Shoenfeld, F. Spertini, A. Wiik, R.L. Humbel (Vienna, Austria)*
- P57 Comparison of three different dsDNA-ELISA with special regard to their efficiency in the diagnosis of systemic lupus erythematosus  
*M. Linnemann, C. Geisen, S. Menn, R. Dinser, C. Herzberg, K. Wielckens (Cologne, Germany)*
- P58 Anti-C1q-Autoantibodies in patients suffering from systemic lupus erythematosus  
*D. Herrmann, P. Oelzner, G. Hein, R. Fünfstück, G. Stein (Jena, Germany)*
- P59 Antibody determination against ENA – a challenge for the routine laboratory  
*M. Schmolke, M. Oppermann, K. Helmke, W.G. Guder (Munich, Germany)*
- P60 Sicca complex and organ-specific autoantibodies  
*S. Paranos, M. Cosic, L. Jelenkovic, M. Milovanovic, Z. Sporic (Belgrade, Yugoslavia)*
- P61 Prevalence of anti-PL-12 antibodies in interstitial lung disease  
*I. Wichmann, A. Alvarez Marquez, R. Garcia Lozano, N. Respaldiza Salas, K. Walter Pérez, M. Montes Cano, E. Rodríguez Becerra, A. Núñez Roldán (Sevilla, Spain)*
- P62 Detection of anti-calcium sensing receptor auto-antibodies using a radioimmunoprecipitation assay.  
*C. Ploix, A. Durand, S. Veber, A. Moreira, A. Desbos, J. Bienvenu, J. Orgiozzi, J.C. Monier, N. Fabien (Benite Cedex, France)*
- P63 Anti-nucleosome autoantibodies and systemic lupus erythematosus: experience performed by using a commercial dot kit  
*G. Morozzi, A. Simpatico, G. Pucci, S. Cucini, F. Bellisai, O. De Pità, R. Marcolongo, M. Galeazzi (Siena, Italy)*

- Low incidence of nuclear, parietal cell and thyroid microsomal antibodies among males under 40 year of age in an unselected population sample from Estonia  
*K. Metsküla, R. Uibo (Tartu, Estonia)* P64
- Antinucleosome autoantibodies in the diagnosis of SLE: a preliminary report of a comparative evaluation of three commercial methods  
*D. Villalto, R. Tozzoli, A. Doria, A. Ghirardello, P.F. Gambari, N. Bizzaro, E. Tonutti, P. Rizzotti (Pordenone, Italy)* P65
- Analytical variability of ELISA methods for thyroid autoantibodies detection affect the clinical performances in AITD diagnosis  
*R. Tozzoli, D. Villalta, N. Bizzaro, E. Tonutti, F. Manoni, D. Bassetti, A. Piazza, M. Pradella, P. Rizzotti (Latisana, Italy)* P66
- Improved sensitivity for detection of SS-A/Ro52, SS-A/Ro60 and SS-B/La in Sjögren's syndrome using INNNO-LIATM ANA update  
*D. Crosbie, K. De Bosschere, D. Cavill, F. Hulstaert, H. Pottel, S. De Keyser, H. Boeykens, T. Gordon, L. Meheus (Zwijnaarde, The Netherlands)* P67
- The risk for Type 1 diabetes mellitus (DM) increases with the number of serological markers of pancreatic autoimmunity in adult patients with organ-specific autoimmune diseases  
*C. Betterle, C.A. Spadaccino, F. Presotto, R. Zanchetta, B. Pedini, M. Lai, N.A. Greggio, G.F. Bottazzo (Padova, Italy)* P68
- Karlsburg type 1 diabetes risk study in normal schoolchildren – Multiple autoantibodies and genetic risk markers predict diabetes onset  
*M. Schlosser, R. Wassmuth, M. Strebelow, B. Ziegler, M. Ziegler (Karlsburg, Germany)* P69
- 21-Hydroxylase is the major target of adrenal cortex autoantibodies (ACA) in patients with different clinical forms of autoimmune Addison's disease  
*C. Dal Pra, F. Presotto, B. Pedini, M. Volpato, R. Zanchetta, C. Betterle (Padova, Italy)* P70
- Early diagnosis of lung cancer by combined determination of tumor-associated autoantibodies  
*K. Conrad, J. Rohayem, J.-Y. Zhang, M. Schmitz, J. Mehlhorn, E.M. Tan, E.P. Rieber (Dresden, Germany)* P71

- Venue** The Hotel Westin Bellevue is located in a pleasant area of the city on the right bank of the Elbe River, 10 minutes walk away from the famous „Zwinger“, the Sempera Opera and the other baroque buildings of the ancient Dresden.  
Große Meißner Strasse 15, D-01097 Dresden
- Registration office** October 18<sup>th</sup>, 2000, 7.00 a.m. – 7.00 p.m.  
October 19<sup>th</sup>, 2000, 7.00 a.m. – 7.00 p.m.  
October 20<sup>th</sup>, 2000, 7.30 a.m. – 7.00 p.m.  
October 21<sup>st</sup>, 2000, 8.00 a.m. – 3.00 p.m.
- Phone/Fax on site** Phone +49 351 805–1946  
Fax +49 351 805–2946
- Chairman** Karsten Conrad, Germany
- Co-Chairmen** Rene-Louis Humbel, Luxembourg  
Michael Meurer, Germany  
Yehuda Shoenfeld, Israel  
Eng M. Tan, USA
- Local Organizing Committee** Karsten Conrad, Andreas Schwab, Gerdi Suhail  
Institut für Immunologie  
Medizinische Fakultät „Carl Gustav Carus“  
Technische Universität Dresden  
Postfach 800 115  
D-01101 Dresden, Germany  
Phone +49 351 8832–767  
Fax +49 351 8832–778  
eMail k\_conrad@rcs.urz.tu-dresden.de
- International Advisory Board** Michael Bachmann, Germany  
Carlos Casiano, USA  
Marvin J. Fritzler, Canada  
Falk Hiepe, Germany  
Tadeo Koike, Japan  
Arno Kromminga, Germany  
Pier Luigi Meroni, Italy  
Michael Manns, Germany  
A. J. Steck, Switzerland  
Günter Steiner, Austria
- Language** English, no simultaneous translation
- City map** see page 31

P & R Kongresse GmbH  
 Bleibtreustrasse 12 A  
 D-10623 Berlin  
 Phone +49 30 88 51-008  
 Fax +49 30 88 51-029  
 eMail autoantibodies@pr-kongresse.de

**Organisation**  
 [Registration, Reservation, Exhibition]

	until June 20 <sup>th</sup>	from June 21 <sup>st</sup>
Participants	DM 350 (€ 178,95)	DM 400 (€ 204,52)
Students/Residents	DM 100 (€ 51,13)	DM 150 (€ 76,69)
One day ticket	DM 120 (€ 61,36)	

**Registration fee**

{includes unlimited access to all scientific sessions, Get-together reception, industrial exhibition, final programme, first issue of the book series „Autoantigens, Autoantibodies, Autoimmunity“ including Abstracts and Papers of the presentations of the Symposium, coffee and lunch breaks}

Wednesday, 18<sup>th</sup> October, 2000  
 8.00 p.m. – Welcome Reception

Friday, 20<sup>th</sup> October, 2000  
 8.00 p.m. – Social Dinner  
 DM 50 (€ 25,56)

- Sightseeing and river boat tours
- Visit of the Green Vault and other famous museums
- Visit of the famous Sempera Opera House
- Trips to famous places in the environ of Dresden (Pillnitz, Moritzburg, Meißen, Radebeul, etc.)
- Trips to the „Sächsische Schweiz“

Corresponding offers will be featured in the programme as well as the opening reception.

October 9<sup>th</sup> – 12<sup>th</sup>, 2002

**Social Programme**

**Pre-/Post-Congress Tours**

**6<sup>th</sup> Dresden Symposium**

## EXHIBITORS AND SPONSORS

The following companies participate in the Industrial-Exhibition or have made a generous sponsoring and we thank all of them for helping to make this symposium successful.

(state on day of printing the final-programme)

**BECKMAN COULTER GMBH**, Krefeld

**D L D DIAGNOSTIKA GMBH**, Hamburg

**EUROIMMUN GMBH**, Groß Grönau

**IMTEC IMMUNDIAGNOSTIKA GMBH**, Berlin

**INNOGENETICS GMBH**, Heiden

**MEDICAL & BIOLOGICAL LABORATORIES CO., LTD.**,  
Nagoya (Japan)

**MEDIPAN DIAGNOSTICA GMBH**, Selchow

**MERIDIAN DIAGNOSTICS EUROPE GMBH**,  
Bad Homburg v.d.H.

**MILENIA BIOTEC GMBH**, Bad Nauheim

**ORGENTEC DIAGNOSTIKA GMBH**, Mainz

**PHARMACIA & UPJOHN DIAGNOSTICS  
GMBH & CO. KG**, Freiburg

**PROGEN IMMUNO-DIAGNOSTIKA**, Heidelberg

**SERAMUN DIAGNOSTICA GMBH**, Dolgenbrodt

**VIVA DIAGNOSTIKA GMBH**, Hürth

## **CORRECTION**

### **EXHIBITORS AND SPONSORS**

The following companies participate in the Industrial-Exhibition or have made a generous sponsoring and we thank all of them for helping to make this symposium successful.

BECKMAN COULTER GMBH, Krefeld

D L D DIAGNOSTIKA GMBH, Hamburg

EUROIMMUN GMBH, Groß Grönau

IMTEC IMMUNDIAGNOSTIKA GMBH, Berlin

INNOGENETICS GMBH, Heiden

MEDICAL & BIOLOGICAL LABORATORIES CO., LTD.,  
Nagoya (Japan)

MEDIPAN DIAGNOSTICA GMBH, Selchow

MERIDIAN DIAGNOSTICS EUROPE GMBH, Bad Homburg v.d.H.

MILENIA BIOTEC GMBH, Bad Nauheim

ORGENTEC DIAGNOSTIKA GMBH, Mainz

PHARMACIA & UPJOHN DIAGNOSTICS GMBH & CO. KG, Freiburg

PROGEN IMMUNO-DIAGNOSTIKA, Heidelberg

SERAMUN DIAGNOSTICA GMBH, Dolgenbrodt

THE BINDING SITE GmbH, Heidelberg

VIVA DIAGNOSTIKA GMBH, Hürth

