International Conference on the Bioscience of Lipids

Editor

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2014 NEWSLETTER

Table of contents

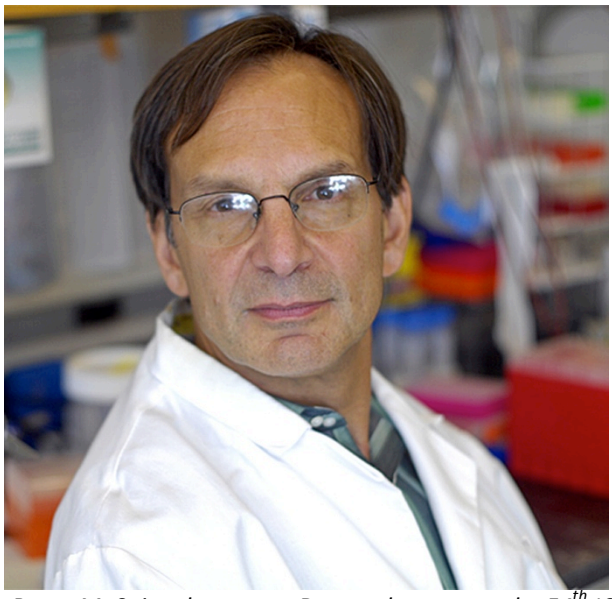
54th International Conference on the Biosciences of Lipids (ICBL)
Bari, Italy, September 17-21, 2013
Social Report
"Bari, Apulia and the Linking of Transcription to Physiology – The Lipid View"

Scientists from around the world, interested in lipids, transcription, physiology, lipidomics, and Italy, came to Bari in mid September to participate in the 54th ICBL conference aptly organized by Antonio Moschetta (Università degli Studi "Aldo Moro") and Maurizio Crestani (Università degli Studi di Milano), together with members of the organizing committee and secretariat. The meeting venue was at the Sheraton Nicolaus Hotel, where many participants also enjoyed accommodation.

The Sheraton Nicolaus Hotel, venue of the 54th ICBL

Before the ICBL programme started in the evening of September 17, a satellite meeting "Cardiolipin as key lipid of mitochondria in health and disease" was organized by Angela Corcelli (University of Bari) and Michael Schlame (New York University). The program of the satellite meeting encompassed 9 plenary lectures and was followed by large audience.

The ICBL program started with the traditional opening ceremonies (the local organizers and the President of ICBL addressed briefly the meeting participants) and the van Deenen Lecture, which this year was given by professor Bruce Spiegelman. His excellent presentation was entitled "Transcriptional control of brown and beige fat: toward a new generation of therapeutics". After the lecture and a discussion section, participants gathered for some hors d'oeuvr, refreshments, and mingling.



Dr. Bruce M. Spiegelman, van Deneen lecturer at the 54th ICBL

On September 18, the theme of the morning session was "Nuclear receptors and the transcriptional regulation of lipid metabolism". Three plenary lectures were given, together with four short oral presentations. The afternoon session was about "The gut-liver axis route for lipids: relevance in nutrition and lifestyle", aptly selected after the lunch which directly upregulated the gut-liver axis. After two plenary lectures, several short presentations were given. The audience (about 200 people) participated actively during the day, and were also presented with about 75 posters which were viewed in two session during the second day.

The third day served both plenary lectures and short oral talks relating to "Dissectign lipid metabolism in diabetes and atherosclerosis" and "Lipid metabolism, transcription, stemness", and the second poster session.
On Friday morning, the session was about "Signal transduction, gene expression and circadian rhythm in the regulation of lipid metabolism". A special lecture was named after the late professor Giovanni Galli, and it was presented by professor John Y. L. Chiang. After lunch, there was free time for the participants to take in Bari and the Apulia region. The formal social tour took a busload of interested participants to the Castle del Monte and the Trani harbor and cathedral. The old castle on the top of a hill in Andria, constructed in the 1240s during the reign of Fredrik II, the Holy Roman Emperor, was a very impressive and imposing castle, which was open to exploration by us. Having inspected all parts of the Castle del Monte, we continued to Trani, a seaport town on the coast north of Bari. Here we walked in the old part of the city and eventually came to the Cathedral of San Nicola the pilgrim. This also was a very impressing and old monumental building, whose construction started already in 1099.

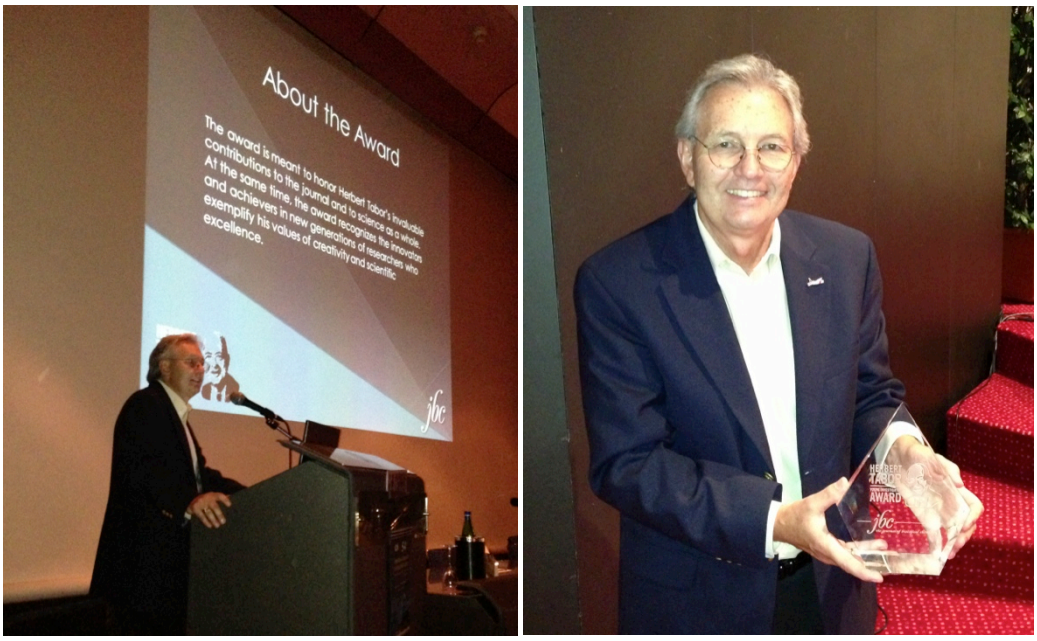
Castle del Monte, Andria (left), the seaport (center) and the Cathedral of San Nicola in Trani (right)

From Trani we hit the road and navigated back to Bari and the Nicolaus Hotel, where the gala dinner was about to start. We barely made it. The dinner was in the hotel's festive Roof Garden. The food was plentiful and very tasty, the music modern, and people clearly enjoyed themselves. According to tradition, the poster awards ceremony took place after dinner and before dancing commenced.

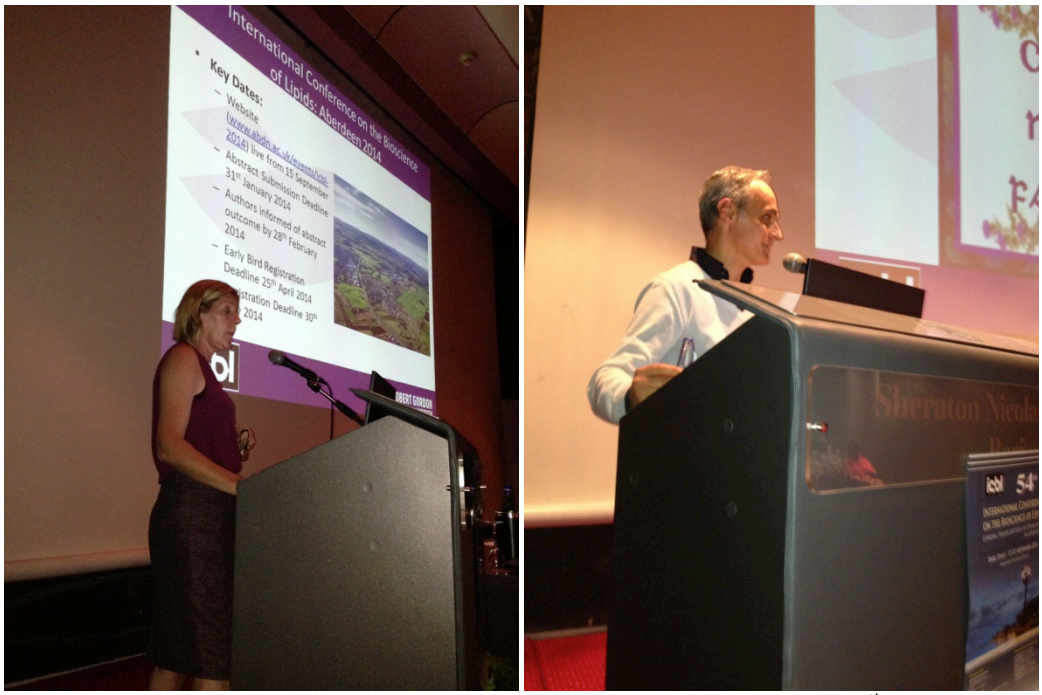
ICBL participants (left) and organizers (right) during the gala dinner

The Saturday morning session started a bit later than the other morning sessions, to allow for more rest after a festive evening and night. The scientific theme for the session was " Dynamics of membrane microdomains and pathophysiological implications". The second session of the day was organized by professor Laszlo Vigh, and entitled "Lipids and membranes in stress management – stress perception, signaling, repair and adaptation". For these last sessions, the audience was still numerous and participated eagerly in discussions after each presentation.
At the end of the meeting, professor George Carman presented the "Journal of Biological Chemistry/Herb Tabor Young Investigator Award" to Dr. Ursula Loizides-Mangold from Geneva.

Professor Cherry Wainwright (Aberdeen) presented the venue and program of the next ICBL meeting (23-27 June, 2014), and wished all welcome to that meeting. Finally, professor Maurizio Crestani thanked all speakers, the audience, and the local organizers for putting together another memorable ICBL meeting, and bade all farewell.



George Carman introducing the JBC/Herb Tabor Young Investigator Award



Cherry L. Wainwright (left) and Maurizio Crestani (right) closing the 54th ICBL

J. Peter Slotte
President of the ICBL

54th International Conference on the Biosciences of Lipids (ICBL)
Bari, Italy, September 17-21, 2013
Scientific Report: "Linking transcription to physiology in lipidomics"

The 54rd International Conference on the Biosciences of Lipids (ICBL), entitled "*Linking transcription to physiology in lipidomics*", was held from Sept. 17-21, 2013, in Bari, Italy. The ICBL conference is organized annually at different locations around the world as a forum for presentation and discussion of recent discoveries in lipid research. This year's meeting was held in Bari, a beautiful city in Southeast Italy considered the door to East due to its strategic geographical location in the Mediterranean Sea and a perfect place to enjoy a good blend of science and the famous Italian warmth. The organizing committee members were from Italy (Antonio Moschetta, Maurizio Crestani, Sandro Sonnino, Giuseppe Palasciano, Donatella Caruso, Emma De Fabiani, Chiara Degirolamo, Nico Mitro, Rachele Mizzi and Elda Desiderio Pinto) and Hungary (Laszlo Vigh). Nearly 200 scientists and accompanying persons from 29 different countries in Europe, North America, South America, Asia, Africa and Australia attended with many participants from Italy, Japan, USA, Poland, United Kingdom, France, Canada, Argentina and Brazil.
The meeting was held at the Sheraton Nicolaus Hotel, a modern business hotel located half way between the Airport and Bari city center and endowed with excellent facilities that make it stand high in the guests' favors throughout the Apulian Region. The Sheraton Hotel has airy, lavishly furnished bedrooms, junior suites and suites for a pleasant and relaxing stay, with attention to every detail. Within the hotel there are restaurants, bars, fitness center, indoor swimming pool, sauna, solarium.

The conference opened with introductory remarks by Peter J. Slotte (Department of Biosciences, Åbo Akademi University), Maurizio Crestani (Università degli Studi di Milano) and Antonio Moschetta (Università degli Studi di Bari "Aldo Moro") the organizers of the 54th ICBL. The scientific program consisted of 7 sessions each of which included plenary talks by invited speakers selected on the basis of both their outstanding research and their ability to present a clear and stimulating talk; a total of 22 internationally recognized scientists were invited to give these plenary talks. In addition, 30 shorter talks on late-breaking research were presented. An important feature of the conference was the emphasis placed on presentation and discussion of research of young investigators and trainees (graduate students/postdoctoral fellows). An international committee selected short talks on the basis of abstracts submitted by trainees. In addition, all scientists had ample opportunity for highlighting their research in two poster sessions; each poster was available for discussion for more than 2 h.
The first day started with a great "Laurens van Deenen" Lecture, entitled "Transcriptional control of brown and beige fat: toward a new generation of therapeutics", given by **Bruce M. Spiegelman** (Boston, USA) who discussed the role of brown and beige adipocytes in human and mice, indicating in the murine beige fat those more similar to adult human brown fat.

Session #1 "Nuclear Receptors and the transcriptional regulation of lipid metabolism" (chairman **Antonio Moschetta**). This session started with a fascinating presentation delivered by **David Mangelsdorf** (Dallas, USA) who talked about the role of the nuclear receptors and FGF21 in the regulation of nutrient metabolism. Next, an interesting talk made by **Malcolm Parker** (London, UK) who described the role of RIP140 corepressor in lipid droplet formation in adipocytes. Before the coffee break, two short talks illustrated, in one case, the dual hepato-specific function of PPARα during fatty acid catabolism and anabolism (**Alexandra Montagner**, Toulouse, France) and, the other, the effects of the different FXR isoforms on hepatic glucose and lipid metabolism (**Jorge C. Correia**, Algarve, Portugal). **Peter Tontonoz**' (Los Angeles, USA) lecture provided new insights into the role of Lpcat3 in the regulation of ER stress in liver and the novel and fundamental role of ABCA1, but not ABCG1, in the LXR anti-inflammatory activity. The involvement of LXRβ in controlling water balance

with targets in both the brain and kidney was the topic of the presentation by **Chiara Gabbi** (Houston, Texas). Then, **Jeroen FJ Bogie** (Diepenbeek, Belgium) discussed the role of myelin-derived phosphatidylserine in the regulation of PPAR activation in macrophages after myelin uptake. The final short talk of this session was presented by **MJ Nunes** (Lisbon, Portugal) and described the regulatory pathways that modulate the expression of CYP46A1 gene, suggesting a role of retinoic signaling pathway in the maintenance of brain cholesterol homeostasis.

Session #2 "The Gut-Liver Axis route for lipids: relevance in nutrition and lifestyle" (chairs **Iannis Talianidis** and **Béatrice Desvergne**). This session started with the lecture delivered by **Paolo Parini** (Stockholm, Sweden), he discussed the role of new factors in the transcriptional regulation of lipid metabolism in humans. **Michael Trauner** (Vienna, Austria) discussed the role of metabolic lipases in non-alcoholic fatty liver disease (NAFLD). Next, two short talks by **Paul P. Van Veldhoven** (Leuven, Belgium) and **Ursula Loizides-Mangold** (Geneva, Switzerland) focused on the role of peroxisomes in the intestine and the importance of the peroxisomal enzyme L-PBE to prevent the dietary toxicity of medium chain fatty acids, respectively. After the coffee break **Ronald P. Oude Elferink** (Amsterdam, Holland) talked about lipid transport and lipid signaling in cholestasis. Next, a short talks by **Chiara Riganti** (Torino, Italy) illustrated the role of omega 3 fatty acids as potential chemosensitizer strategy in colon cancer. Then, **Leslie Couëdelo** (Bordeaux, France) talked about the influence of the nature of vegetable oils blended with flaxseed oil on alpha linolenic acid bioavailability and plasma lipoprotein profile in rats. The session ended with a short talk by **Marco Busnelli** (Milano, Italy) on the impact of different dietary treatments on the molecular lipid profile of aortic plaques developed in apoE-/- mice.

Session #3 "Dissecting lipid metabolism in diabetes and atherosclerosis" (chairs **David Mangelsdorf** and **Peter Tontonoz**). This session started with two main lectures delivered by **Sergio Rodriguez-Cuenca** (Palma de Mallorca, Spain) and **Béatrice Desvergne** (Lausanne, Switzerland). The first described the role of dihydroceramide desaturase (DEGS1) in adipocytes differentiation and function and, the second illustrated the positive and negative roles of fat in development and homeostasis. The first short talk of this session was made by **Sabrina Krautbauer** (Regensburg, Germany) and talked about free fatty acids and inflammation and their role in increased manganese superoxide dismutase (MnSOD) level in obesity which protects adipocytes from excessive ROS associated with increased triglyceride storage. Next, **Sara Tucci** (Freiburg, Germany) described the long-term effects of medium-chain triglyceride (MCT) treatment in mice with a β-oxidation defect. After the coffee break **Laura Calabresi** (Milano, Italy) presented a lecture entitled "HDL and atherosclerosis: insights from inherited HDL disorders". Then, **Bernardo L. Trigatti** (Ontario, Canada) described the potential role of HDL to protect macrophages against ER-stress-induced apoptosis in an SR-BI dependent manner. The last two speakers before the break were **Eleonora Poggiogalle** (Roma, Italy) and **Michele Vacca** (Bari, Italy). They talked about functional and morphological vascular changes in subjects with familial combined hypolipidemia and epicardial adipose tissue transcriptomics in coronary atherosclerosis, respectively.

Session #4 "Lipid metabolism, transcription, stemness" (chairs **Paolo Parini** and **Emma De Fabiani**). The afternoon session began with a plenary lecture by **Elena Cattaneo** (Milano, Italy) who talked about the Huntington disease and the role of lipids in the development of this pathology. Next, **Nicholas R.F. Hannan** (Cambridge, UK) presented an interesting talk entitled "Modeling disorder of lipid metabolism using human induced pluripotent stem cells". After this, **Tracy Vrablik** (Washington, USA) discussed the roles of lipid droplets in *C. elegans* development and germ cell maintenance. **Makoto Ito** (Fukuoka, Japan) described the synthesis of DHA and DHA-containing glycerolipids and their accumulation in lipid droplets of thraustochytrids. After the coffee break **Cécile Rochette-Egly** (Strasbourg, France) presented a lecture on retinoic acid signaling and mouse embryonic stem cell differentiation. Next, **Apostolos Pappas** (New Jersey, USA) demonstrated that IL-11, IL-1α, IL-6, and TNFα are induced by solar radiation and described their involvement in the facial subcutaneous fat loss. Then, **Gaia Cermenati** (Milano, Italy) showed the protective effects of neuroactive steroids on diabetic peripheral neuropathy. This session ended with a short talk by **L.**

Siculella (Lecce, Italy) on the transcriptional regulation of citrate carrier by SREBP-1 and PPARα in rat cell lines.

Session #5 "Signal transduction, Gene expression and circadian rhythm in the regulation of lipid metabolism" (chairs **Maurizio Crestani** and **Donatella Caruso**). The first two lectures in this session were on the mitochondrial regulation of cellular processes during aging and the transcriptional network function in the regulation of lipid metabolism: during his lecture **Johan Auwerx** (Lausanne, Switzerland) provided new insights into the role of mitochondrial proteins in aging regulation while **Iannis Talianidis** (Greece) discussed his latest data on the interplay between HNF1 and 4 transcriptional network and liver lipid metabolism. Next, a short talk by **Catherine Mounier** (Montreal, Canada) suggested a role for stearoyl CoA-desaturase 1 in the epithelial to mesenchymal transition, one of the main features of metastasis recurrence in breast cancer while **Anna Dziewulska** (Warsaw, Poland) talked about the stearoyl CoA-desaturase 1-mediated regulation of DNA methylation in adipocytes and skeletal muscle. After the break, Professor **John Chiang** (Rootstown, USA) gave a special lecture in memory of Professor Giovanni Galli sponsored by the University of Milano and focused on bile acid signaling in lipid metabolism. Four short talks given by **Henrikka Kentala** (Helsinki, Finland) on sterol-dependent function of ORP2-VAPA complexes at MCS and its implication in cell lipid homeostasis, by **Miguel Moutinho** (Lisbon, Portugal) on the metabolic impact of Cyp46a1 overexpression (the main enzyme in brain cholesterol disposal pathway) in neuronal cells, by **Tim Vanmierlo** on the involvement of renin angiotensin system in the central nervous system response to dietary fat and by **Lagarde Michel** (Lyon, France) on the role of oxidized LDL in platelet function completed the Friday morning session.

Session #6 "Dynamics of membrane microdomains and pathophysiological implications" (chairman **Sandro Sonnino**). The session opened with a talk delivered by **Jin-ichi Inokuchi** (Sendai, Japan) on the role of membrane gangliosides (the major components of lipid rafts) in T-cell activation. Next, **Kazuhisa Iwabuchi** (Tokyo, Japan) presented his work on organization and function of glycolipid-enriched microdomains in phagocytes. **George M. Carman** (New Brunswick, USA) gave an interesting and thought-provoking talk on the cellular functions of phosphatidate phosphatase enzymes in yeast. Three more short talks by **Hugo Maccioni** (Cordoba, Argentina) on the role of transmembrane domains in the sorting of proteins between Golgi complex and plasma membrane, by **Tsubasa Miyoshi** (Kobe, Japan) on the mechanisms of cholesterol-induced Lo phase formation in PL/cholesterol systems, and by **Angela Rizzo** (Milano, Italy) who suggested atomic force microscopy as a tool to perform a morpho-dimensional characterization of lipid rafts, completed the session.

Session #7 "Lipids and membranes in stress management: stress perception, signaling, repair and adaptation" (chairs **Laszlo Vigh** and **Annette Draeger**). This final session started with an interesting talk delivered by **Teun Munnik** (Amsterdam, NL) who talked about stress-activated phosphatidylcholine and diacylglycerol signaling pathways in plants, after which **Annette Draeger** (Berne, Switzerland) presented her recent research on repair mechanisms of plasma membrane damage and their implications in cell survival. Finally, **Laszlo Vigh** (Szeged, Hungary) provided new insights on fatty feedback in stress management. The conference ended with two short talks given by **Stefano Piotto** (Salerno, Italy) and by **Evelyn Orsò** (Regensburg, Germany) on the impact of sphingomyelin/cholesterol ratio in the interaction of hydroxylamine derivatives with lipid membrane and on HDL-mediated efflux stress in human macrophages, respectively.

Maurizio Crestani made some closing remarks and Cherry Wainwright invited the audience to attend the 55th ICBL that will be dedicated to the memory of Professor Alan Garton and will take place in Aberdeen, Scotland on June 23-27, 2014.

Maurizio Crestani and Antonio Moschetta
On behalf of the Organizing Committee of the 54th ICBL

The Poster Awards of the 54th ICBL

Linking transcription to physiology in lipidomics

During the gala dinner at the Nicolaus Hotel Roof Garden the traditional Poster Award winners were announced. Members of the 2013 Poster Award Jury were: Laszlo Vigh (chairman), Hungary, Makoto Ito (Japan), Norma Sterin-Speziale (Argentina), Christian Wolfrum (Zurich), Donatella Caruso (Italy), Emma De Fabiani (Italy) and Chiara Degirolamo (Italy). From about 75 posters, 36 were eligible as finalists by the Poster Award Jury. The pre-selected posters were more closely inspected by all members of the Poster Award Jury during the Conference poster sessions. Criteria for selecting the top posters were the relevance of the topic, originality of the subject, the quality of the presentation, the visual appearance, and discussions with the presenter. In this year's two Poster Award presentations were sponsored by ***Progress in Lipid Research***. The abstracts of the two winning posters are shown below. The ICBL community is proud of the high quality of the posters presented at the Bari meeting and congratulates the winners.

Laszlo Vigh
Vice President of ICBL

The winners of the 2013 ICBL Poster Awards were: Erika Fiorino (Università degli Studi di Milano, Milano, Italy) and Katarzyna Malenczyk (Nencki Institute of Experimental Biology, Warsaw, Poland)

Poster award winner Erika Fiorino (left) and the President of the jury Laszlo Vigh (right)

Poster award winner Katarzyna Maleńczyk (left) and the President of the jury Laszlo Vigh (right)

Progress in Lipid Research Poster Awards

HISTONE DEACETYLASES REGULATE CHOLESTEROL 7α-HYDROXYLASE AND HEPATIC LIPID METABOLISM

E. Fiorino, C. Multineddu, F. Gilardi, A. Ferrari, M. Giudici, N. Mitro, D. Caruso, E. De Fabiani, M. Crestani

Dipartimento di Scienze Farmacologiche e Biomolecolari, Università degli Studi di Milano, Italia

Cholesterol 7α-hydroxylase (CYP7A1) is the major check-point of bile acid (BA) synthesis, quantitatively the most important route of cholesterol disposal in mammals. BA returning to the liver repress *CYP7A1* expression. We showed that BA induce the sequential recruitment of HDAC7, 3, 1 and of the corepressor SMRTα on the *CYP7A1* promoter. Previous results showed that non-selective HDAC inhibitors increase *CYP7A1* expression *in vitro* and *in vivo* by preventing the negative feedback exerted by BA and reduce serum cholesterol in mice. Based on these seminal findings, our aim was to define the role of specific HDACs and corepressors in the regulation of *CYP7A1*. To this end, we tested class selective HDAC inhibitors *in vitro* and *in vivo*. By using a human reporter cell line containing *CYP7A1* promoter upstream of luciferase gene, we demonstrated that the class I selective HDAC inhibitor MS275 prevented the repressive effect of BA on *CYP7A1*. In addition, MS275 increased liver *Cyp7a1* expression in C57Bl/6J mice. To unravel the role of specific HDACs and corepressors we cloned shRNA against Hdac1, 3, 4, 5, 7 and Smrt in adenovectors and we tested them in primary hepatocytes. Hdac1, 7 and Smrt silencing significantly increased *Cyp7a1* transcription, highlighting their involvement in the regulation of this gene. To investigate the role of HDAC7 *in vivo* we generated a HDAC7 liver-specific KO mouse (H7LivKO) and observed 10% reduction of total plasma cholesterol in this mouse model. Preliminary results in H7LivKO mice on western diet showed reduction of body weight and of LDL-cholesterol, lower liver lipid accumulation and liver size compared to wild type mice suggesting a role of HDAC7 on hepatic cholesterol and lipid metabolism. Collectively, our results show that specific HDACs affect *CYP7A1* transcription and underscore their role in the regulation of BA and lipid homeostasis.

Funded by EU FP6 LSHM-CT2006-037498 and Cariplo Foundation 2008.2511

CB_1 CANNABINOID RECEPTOR ACTIVATION LEADS TO FOCAL ADHESION KINASE-DEPENDENT CYTOSKELETAL REMODELING IN PANCREATIC BETA-CELLS AND INDUCES INSULIN RELEASE

Katarzyna Malenczyk[1,2], Magdalena Jazurek[1], Erik Keimpema[2], Justyna Jankiewicz[1], Jolanta M. Redowicz[3], Tibor Harkany[2], Agnieszka Dobrzyn[1]

1. Laboratory of Cell Signaling and Metabolic Disorders, Nencki Institute of Experimental Biology, PAS, Warsaw, Poland
2. Division of Molecular Neurobiology, Department of Medical Biochemistry and Biophysics, Karolinska Institutet, Stockholm, Sweden
3. Laboratory of Molecular Basis of Cell Motility, Nencki Institute of Experimental Biology, PAS, Warsaw, Poland

The pancreatic β cells exhibit remarkable abilities to change their function in response to altered tissue insulin demands. The increasing body of evidence suggests important role of lipid neuromodulators, endocannabinoids (eCBs) in regulation of this process. However, the molecular cascade coupling agonist-induced cannabinoid receptor activation to insulin release remains unknown. In the present study we aim to elucidate the role and mechanism of eCBs' action on insulin secretion. We combine molecular pharmacology and genetic tools carrying the experiments out in INS-1E β cell line and pancreatic islet isolated from wild type and cannabinoid receptor 1 (CB_1R) knockout mice. RT-PCR, western blot analysis, immunochemistry and insulin secretion measurements are used to investigate presence, role and mechanism linking eCBs signaling to insulin

release. Both β cells and pancreatic islets exhibit functional and autonomous eCBs signaling (receptors and enzymatic machinery tuning anandamine (AEA) and 2-arachidonoylglycerol (2-AG) bioavailability). We show that AEA and 2-AG potentiate insulin secretion. Observed eCBs' effect depends on CB_1R activation since it is absent in the pancreatic islets isolated from $CB_1R^{-/-}$ mice and impeded only when its antagonist (O-2050) or reverse agonist (AM251) are applied. CB_1R stimulation leads to activation of Akt and extracellular signal-regulated kinases 1/2 and further phosphorylation of focal adhesion kinase (FAK). CB_1R-mediated FAK activation induces the formation of focal adhesion plaques and stress fibers, facilitating the second-phase of insulin release. We show that inhibition of endocannabinoid synthesis of FAK activity foreclose insulin release. The obtained results show FAK downstream from CB_1Rs mediates eCBs-induced insulin release by allowing cytoskeletal reorganization that required for the exocytosis of secretory vesicles.

Support: Foundation for Polish Science TEAM/2010-5/2, MPD/2009/4.

The 54th ICBL Young Investigator Award

The final session of the ICBL meeting was capped off with the presentations of the ***Journal of Biological Chemistry/Herbert Tabor Young Investigator Award***, which was awarded to Ursula Loizides-Mangold.
Loizides, a senior scientist in Howard Riezman's laboratory at the University of Geneva, uses mass-spectrometry-based lipidomics to dissect the role of lipids in cell function and the effects of nutrition on whole body metabolism.
Working with Bernard Thorens' group at the University of Lausanne, Loizides studied the L-peroxisomal bifunctional enzyme, or L-PBE, which has been associated with steatohepatitis, insulin resistance and diabetes.
They found that L-PBE is required to prevent dietary toxicity of medium-chain fatty acids, such as the ones found in coconut oil. These fatty acids induce production of dicarboxylic fatty acids, which accumulate due to L-PBE deficiency resulting in liver failure, inflammation and fibrosis.
These results highlight DCAs' potential toxicity and suggest that specific metabolic pathways can be activated by different nutrients to adapt the organism to the available resources.
During Loizides' postdoctoral studies, she worked on the regulation of polyamine biosynthesis. She said she was inspired by Herbert and Celia Tabor's work on polyamine metabolism and that it is a very special honor for her to receive the Tabor award.

Presenting the award was George M. Carman (Associate Editor, Journal of Biological Chemistry). The title and abstract of the Young Investigator award winner presentations is shown below.

Ursula Loizides-Mangold (left) and George Carman (right)

George M. Carman
ICBL Corresponding Member

The peroxisomal enzyme L-PBE is required to prevent the dietary toxicity of medium chain fatty acids

Ursula Loizides-Mangold[1], Jun Ding[2], Gianpaolo Rando[2], Janardan K. Reddy[3], Walter Wahli[2], Howard Riezman[1], Bernard Thorens[2]
[1]*Department of Biochemistry, NCCR Chemical Biology, University of Geneva, CH- 1211 Geneva, Switzerland*
[2]*Center for Integrative Genomics, University of Lausanne, Lausanne, CH-1015 Switzerland*
[3]*Department of Pathology, Northwestern University, Chicago, IL 60611, USA*

Fatty acids are oxidized in either mitochondria or peroxisomes. L-PBE is the second enzyme of the inducible peroxisomal β-oxidation system with unclear substrate specificity. The aim of this study was to identify the specific role of L-PBE in the adaptation to a high fat diet that is rich in medium chain fatty acids. Here we show that *L-pbe*$^{-/-}$ mice fed a coconut oil based high fat diet die from

fulminant liver failure, with massive hepatic inflammation and fibrosis. Lipid profiling of *L-pbe*$^{-/-}$ mice revealed elevated sphingolipid levels and high levels of medium-chain dicarboxylic fatty acids (DCAs). Inhibition of ceramide biosynthesis modestly prolonged mice lifespan whereas inhibition of dicarboxylic fatty acid production completely protected *L-pbe*$^{-/-}$ mice against liver failure caused by a medium chain rich diet. Here we show, that the accumulation of DCAs is due to the activation of the liver ω-oxidation system. The medium chain rich diet strongly induced the ω-oxidation genes *Cyp4a10* and *Cyp4a14* in a PPARα and PPARγ dependent manner. Taken together, these results show a major role for L-PBE in the degradation of DCAs and demonstrate that an imbalanced production of DCAs has severe metabolic consequences.

The 2014 ICBL Steering Committee

At the ICBL 2013 which took place in Bari, Italy, the ICBL Steering Committee for the upcoming years was elected.


J. Peter Slotte
President


Lazlo Vigh
Vice-President


Maurizio Crestani
Secretary


Peter Ott
Public Relations Officer

Professor **Félix M. Goñi** (Universidad del País Vasco, Bilbao, Spain), who organized the 2010 ICBL meeting in Bilbao, will step down and is replaced by professor **Antonio Moschetta**, who organized the Bari ICBL (2013) together with professor Maurizio Crestani. We thank Felix for all his contributions to ICBL over the years, and wish Antonio welcome to the Steering Committee as oridinary member (2014-2016). Other ordinary members are professor **Dennis Vance** (ICBL Banff 2012) and professr Ewa Świeżewska (ICBL Warzaw 2011).


Antonio Moschetta


Dennis Vance


Ewa Świeżewska

Members of the ICBL Advisory Board are **Guenther Daum** (Graz University of Technology, Austria; Past-President since 2013), **Toon de Kroon** (Utrecht University, The Netherlands; elected 2011), **Banafshe Larijani** (London Research Institute, Lincoln's Inn Fields Laboratories, UK; elected 2012); and **Gabor Tigyi** (University of Tennessee, Health Science Center, Memphis, TN, USA).


Guenther Daum


Toon de Kroon


Banafshe Larijani


Gabor Tigyi

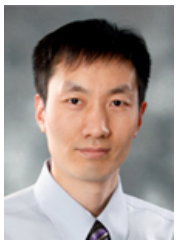
Corresponding Members of the ICBL Steering Committee are **Andrew Brown** (elected 2009; re-elected 2012) from the University of New South Wales, Sydney, NSW, Australia; **Makoto Ito** (elected 2012) from the Kyushu University, Hakozaki, Fukuoka, Japan; **Richard Lehner** (elected 2012) from the University of Alberta, Edmonton, Alberta, Canada; **Bao-Liang Song** (elected 2013) from the Institute of Biochemistry and Cell Biology, Shanghai Institutes for Biologicsal Sciences, Chinese Academy of Sciences; **Amit Chattophadhyay** (elected 2013) from the Centre for Cellular and Molecular Biology, Hyderabad, India; **Norma B. Sterin-Speziale** (elected 2012), Consejo Nacional de Investigaciones

Científicas y Técnicas (CONICET), Ciudad Autónoma de Buenos Aires, Argentina; and **Dennis R. Voelker** (elected 2012), Pulmonary Division Dept. Med. National Jewish Health, Denver, CO, USA.


Andrew Brown


Makoto Ito


Richard Lehner


Bao-Liang Song


Amit Chattophadhyay


Norma B. Sterin-Speziale


Dennis R. Voelker

J.Peter Slotte
President of the ICBL

The 55th International Conference on the Bioscience of Lipids
"Lipids as Mediators of Health and Disease"
June 23-27, 2014
Aberdeen, UK

The Conference venue

View of Aberdeen

Early bird registration deadline: April 25th, 2014

Preliminary program of the 55th ICBL

Monday, June 23, 2014

17th Laurens Van Deenen Lecture: Susan Pyne

Tuesday, June 24, 2014

Session 1: Lipid Modulators of Inflammation and Immunity
Session 2: Modified Fatty Acids and Lipids

Wednesday, June 25, 2014

Session 3: Endocannabinoids: Synthesis and Function
Social program: Civic reception in the Maritime Museum

Thursday, June 26, 2014

Session 4: Phytolipids - A Vision for the Future?
Session 5: Lipidomics - What's Next?
Conference Dinner at Raemoir House, Prize Giving and Ceilidh

Friday, June 27, 2014

Session 6: Lipids in Whole Body Systems
Session 7: Membrane Lipid Trafficking
Closing Lecture; Klaus Wahle, University of Aberdeen
Dedicated to the memory of Alan Garton, FRS, FRSE, Founder Member of ICBL

Last update: February 12, 2014

Venue

Aberdeen, UK

The conference will be hosted at the Robert Gordon University's Garthdee Campus, a beautiful riverside setting benefitting from excellent bus transport links with city centre and hotel accommodation, on-campus sports centre and extensive grounds.

Chairpersons: Cherry Wainwright (Robert Gordon University) and Klaus Wahle (Aberdeen University and Strathclyde University)

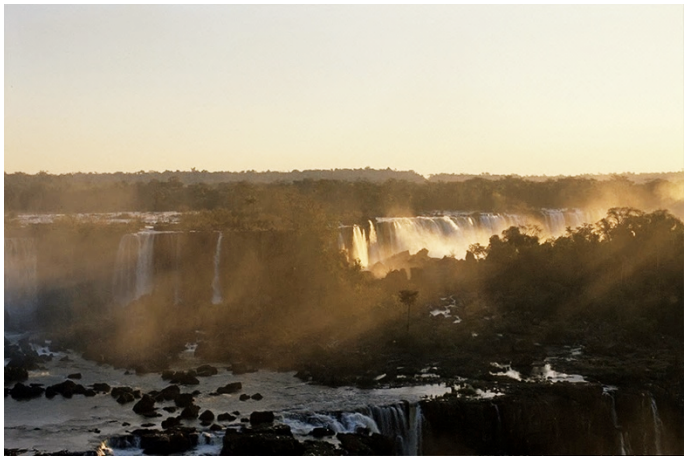
Local Organizers

Dino Rotondo (UK)
Anna Nicolaou (UK)
Phil Whitfield (UK)
Douglas Tocher (UK)
Giovanna Bermano (UK)
Marie Goua (UK)
Alan Sneddon (UK)
Jane McKenzie (UK)

Address for correspondence

For any information about the 55th ICBL please contact ICBL Conference Secretariat.
e-mail: Cherry Wainwright (c.wainwright@rgu.ac.uk), Klaus Wahle (k.wahle@abdn.ac.uk), CPD Services, Research and Innovation - University of Aberdeen - University Office (cpdservices@abdn.ac.uk).
Conference web site: http://www.abdn.ac.uk/events/icbl-2014/
Although abstract submissions have officially closed, organizers would still be able to accommodate additional posters.

FUTURE CONFERENCE
56th International Conference on the Bioscience of Lipids
2015
Iguazú National Park, Argentina



View of Iguazú Falls

Venue: Iguazú National Park, Argentina

Organizing Committee
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Preliminary Scientific Program
Lipid synthesis, transport and metabolic regulation
Lipid metabolism and lipid signaling in health and disease
Biophysics of lipids, lipid/lipid and lipid/protein interactions

Maurizio Crestani
Secretary of ICBL Steering Committee