PATHOPHYSIOLOGY AND CLINICAL MANAGEMENT OF ALCOHOLIC LIVER DISEASE

January 27-28, 2022

Online Live Event

DIGITAL

APPLICATION FOR CME CREDITS SUBMITTED

An application has been made to the UEMS EACCME® for CME accreditation of this event.

PREFACE

Dear friends and colleagues,

It is our great pleasure to invite you to the Symposium 227 **„PATHOPHYSIOLOGY AND CLINICAL MANAGEMENT OF ALCOHOLIC LIVER DISEASE“**, organized by the Falk Foundation e.V. that will take place from January 27th until January 28th, 2022 preceding the 38th Annual Meeting of the German Association for the Study of the Liver (GASL). Originally planned as a face to face symposium in Mannheim, the event had to be reorganized as a virtual event due to the ongoing pandemic.

Alcoholic Liver Disease (ALD) – throughout decades due to the label of self-infliction a neglected disease and heavily underfunded clinical research entity – recently gained more public and research interest, probably due to the major advances in the clinical management of Hepatitis B and C, to the alarming increase in alcohol consumption in emerging countries, and in the context of risky social drinking in the upper class. In parallel, however, a continuously increasing attention from research funding sources and pharmaceutical industry is given to NAFLD, which is termed “the epidemic of the 21st century”, thus again pushing ALD behind from the foreground.

Although NAFLD is already affecting about a quarter of the adult population and needs attention, in most cases it is responsible for mild disease courses, whereas severe morbidity and mortality from liver disease is still mostly based on ALD. Aiming to (re)sensitize to the strong need for an academic and clinical focus on ALD, we set up this program and are very happy to present a list of renowned experts prone to provide to us the most recent cutting-edge knowledge on ALD. We have spanned the bow from liver damage and disease initiation – to – fibrosis and disease progression –, including inflammatory phenotyping and molecular profiling at cellular and molecular levels, towards end stage disease – alcoholic hepatitis, liver failure and systemic disturbance – with an outlook on possibilities of intervention.

Complementary to the oral presentations, there will be accompanying poster session on the first day. The symposium will be followed by the annual meeting of the GASL, to which you are also cordially invited.

We thank all the speakers and participants of this symposium for taking the time to share their contributions and opinions on the variant aspects of ALD. We are looking forward to an excellent symposium that will provide a comprehensive course on the variant aspects of ALD and hopefully open doors for new projects and collaborations.

Last but not least, we are most grateful to the Falk Foundation for the generous support of this event.

We wish you a most enjoyable and insightful meeting and very much look forward to welcoming you online.

Steven Dooley
GASL President 2021/2022

with Jonel Trebicka and Sebastian Mueller

PATHOPHYSIOLOGY AND CLINICAL MANAGEMENT OF ALCOHOLIC LIVER DISEASE

January 27-28, 2022

Scientific Organization:
Prof. Dr. Steven Dooley
Department of Medicine II
Medical Faculty Mannheim
Heidelberg University
Theodor-Kutzer-Ufer 1-3
68167 Mannheim
Germany
Telephone: +49 621 383-3768
E-mail: steven.dooley@medma.uni-heidelberg.de

Scientific Co-Organization:
Sebastian Mueller, Heidelberg (Germany)
Jonel Trebicka, Frankfurt (Germany)

The times in the program are given in UTC.
Please check your local time, e.g. Germany UTC+1.

Thursday, January 27 2022
(13:30 – 15:05 UTC)

13:30	Welcome *Steven Dooley, Mannheim*
SESSION I **Inflammatory phenotyping and molecular profiling**	
Chairs: *Richard Moreau, Paris*	
13:35	Introduction to the topic *Richard Moreau, Paris*
13:40	Molecular profiling of alcoholic hepatitis *Ramon Bataller, Pittsburgh*
13:55	Q&A
14:00	Immune disfunction in alcohol-related liver disease *Shilpa Chokshi, London*
14:15	Q&A
14:20	Inflammation and therapeutic concepts in alcoholic hepatitis *Bin Gao, Bethesda*
14:35	Q&A
14:40	Impact of the gut on alcohol-related liver disease progression and severe alcoholic hepatitis *Bernd Schnabl, San Diego*
14:55	Q&A
15:00	Summary & End of the session *Felix Stickel. Zurich*

Thursday, January 27 2022
(15:05 – 16:00 UTC)

POSTER SESSION

Chairs: *Steven Dooley, Mannheim; Sebastian Mueller, Heidelberg; Jonel Trebicka, Frankfurt*

15:05	Introduction *Steven Dooley, Mannheim*
15:10	Room 1: Therapy / Clinical
15:10	Room 2: Profiling / Clinical
15:10	Room 3: Exp1 Mouse models
15:10	Room 4: Exp2 Metabolism
15:10	Room 5: Exp3 Signaling / Gender
15:10	Room 6: Socioeconomy / Clinical
15:50	Q&A

The authors of accepted posters will present their poster in 3-4 minutes. Afterwards there is time for discussion or questions.

16:00	Break

Thursday, January 27 2022
(16:10 – 17:45 UTC)

SESSION II
Alcoholic hepatitis, liver failure and systemic disturbance

Chairs: *Jonel Trebicka, Frankfurt*

16:10	Introduction to the topic *Jonel Trebicka, Frankfurt*
16:15	Clinics of severe alcoholic hepatitis and liver transplantation *Alexandre Louvet, Lille*
16:30	Q&A
16:35	Systemic (mis)communication in severe alcoholic hepatitis and ACLF *Richard Moreau, Paris*
16:50	Q&A
16:55	Novel drugs for management of acute alcoholic hepatitis *Vijay Shah, Rochester*
17:10	Q&A
17:15	Mechanisms of recovery from and strategies for survival of severe alcoholic hepatitis and ACLF *Rajiv Jalan, London*
17:30	Q&A
17:35	Summary & End of the session *Jonel Trebicka, Frankfurt*
17:40	Closing words *Steven Dooley, Mannheim*

Friday, January 287 2022
(08:00 – 11:30 UTC)

08:00 Welcome
Steven Dooley, Mannheim

SESSION III
Liver damage and disease initiation

Chairs: *Sebastian Mueller, Heidelberg*

08:05	Introduction to the topic *Sebastian Mueller, Heidelberg*
08:10	Early alcoholic stress to the liver - damage vs steatosis *Alexander Krag, Odense*
08:25	Q&A
08:30	Inflammation and fibrogenesis in alcohol-related liver disease *Sophie Lotersztajn, Paris*
08:45	Q&A
08:50	Genetic susceptibility for adverse alcohol effects towards liver *Felix Stickel, Zurich*
09:05	Q&A
09:10	Pathomorphology of alcohol-related liver disease progression *Tania Roskams, Leuven*
09:25	Q&A
09:30	Summary & End of the Session *Sebastian Mueller*
09:35	Break

Friday, January 287 2022
(08:00 – 11:30 UTC)

SESSION IV
Fibrosis and disease progression to cirrhosis

Chairs: *Steven Dooley, Mannheim*

10:00	Introduction to the topic *Steven Dooley, Mannheim*
10:05	Architectural and vascular disturbance of liver disease progression *Jan G. Hengstler, Dortmund*
10:20	Q&A
10:25	Stratification of cirrhosis and its impact on liver carcinogenesis *Massimo Pinzani, London*
10:40	Q&A
10:45	Cell biology of nonparenchymal cells in ALD – repair, disease progression and carcinogenesis *Robert F. Schwabe, New York*
11:00	Q&A
11:05	Alcohol mediated modulation of the matrisome and consequences *Gavin E. Arteel, Pittsburgh*
11:20	Q&A
11:25	Summary & End of the Session *Steven Dooley, Mannheim*
11:30	Closing words *Steven Dooley, Mannheim*

LIST OF SPEAKERS, MODERATORS AND SCIENTIFIC ORGANIZERS

Gavin E. Arteel, PhD, FAASLD
Professor of Medicine
Division of Gastroenterology,
Hepatology and Nutrition
University of Pittsburgh
S414 Biomedical Science Tower
200 Lothrop St.
Pittsburgh, PA 15261
USA
gearteel@pitt.edu

Ramon Bataller, MD, PhD
Chief of Hepatology
Division of Gastroenterology,
Hepatology and Nutrition
University of Pittsburgh
S414 Biomedical Science Tower
200 Lothrop St.
Pittsburgh, PA 15261
USA
bataller@pitt.edu

Dr. Shilpa Chokshi
Chief Scientific Officer
Institute of Hepatology
Honorary Reader in Hepatology
Kings College London
Foundation for Liver Research
111 Coldharbour Lane
London SE5 9NT
Great Britain
s.chokshi@researchinliver.org.uk

Prof. Dr. Steven Dooley
Head of Section Molecular Hepatology
Department of Medicine II
UMM Universitätsmedizin Mannheim
Theodor-Kutzer-Ufer 1-3
68167 Mannheim
Germany
steven.dooley@medma.uni-heidelberg.de

Bin Gao, MD, PhD
Senior Investigator
Laboratory of Liver Diseases
National Institutes of Health
5625 Fishers Lane, Room 2S-33
Bethesda, MD 20892
USA
bgao@mail.nih.gov

Prof. Dr. Jan G. Hengstler
Leibniz Research Centre for
Working Environment and Human Factors
IfADo
Ardeystr. 67
44139 Dortmund
Germany
hengstler@ifado.de

Prof. Dr. Rajiv Jalan
Royal Free Hospital
School of Medicine
Institute of Hepatology
Rowland Hill Street
London NW3 2PF
Great Britain
r.jalan@ucl.ac.uk

Aleksander Krag, MD, PhD, MBA
Professor and Head of Hepatology
Department of Gastroenterology
and Hepatology
University of Southern Denmark & Odense
University Hospital
Campusvej 55
5230 Odense
Denmark
aleksander.krag@rsyd.dk

Sophie Lotersztajn, MD, PhD
Director of Research
Deputy Director Center for
Research on Inflammation
INSERM U1149
Université de Paris
Paris
France
sophie.lotersztajn@inserm.fr

Alexandre Louvet
Service des maladies de l'appareil digestif
Hôpital Huriez
Rue Polonovski
59037 Lille cedex
France
alexandre.louvet@chru-lille.fr

Prof. Dr. Richard Moreau
Center for Research on Inflammation
INSERM U1149
Université de Paris
Paris
France
richard.moreau@inserm.fr

Prof. Dr. Sebastian Mueller
Director, Center for Alcohol
Research, University of Heidelberg
Vice Head, Department of Internal
Medicine, Salem Medical Center Heidelberg
Zeppelinstr. 11-33
69121 Heidelberg
Germany
sebastian.mueller@urz.uni-heidelberg.de

Massimo Pinzani, MD, PhD
UCL Insitute for Liver and
Digestive Health
Royal Free Hospital U3
Pond Street
London NW3 2QG
Great Britain
m.pinzani@ucl.ac.uk

Tania Roskams, MD, PhD
Catholic University of Leuven
University Hospital St. Rafael
Department of Pathology
Minderbroederstraat 12
3000 Leuven
Belgien
tania.roskams@gmail.com

Prof. Dr. Bernd Schnabl
UCSD School of Medicine
Division of Gastroenterology
Department of Medicine
University of California
9500 Gilman Drive
La Jolla CA 92093
USA
beschnabl@health.ucsd.edu

Prof. Dr. Robert F. Schwabe
Columbia University
Irving Cancer Research Center
Department of Medicine
1130 St. Nicholas Avenue
New York NY 10032
USA
rfs2102@cumc.columbia.edu

Vijay Shah, MD
Professor of Medicine
Mayo Clinic
GI Research Unit
Alfred 2-435
200 First Street SW
Rochester MN 55905
USA
shah.vijay@mayo.edu

Prof. Dr. Felix Stickel
FMH Hepatologie / FMH Gastroenterologie
Hirslanden Bern AG
Klinik Beau-Site
Schänzlihalde 11
3013 Bern
Switzerland
felix.stickel@hirslanden.ch

Prof. Dr. Jonel Trebicka
Innere Medizin I
Universitätsklinikum Frankfurt
Theodor-Stern-Kai 7
60596 Frankfurt
Germany
jonel.trebicka@kgu.de

POSTER ABSTRACTS

1. Gender-related differences in response to DUAL diet in murine model of steatohepatitis
   R. Benede-Ubieto, O. Estevez-Vazquez, M. Dumartin, J. Reissing, T. Bruns, J. Vaquero, C. Liedtke, C. Trautwein, R. Banares, F. Cubero, Y. Nevzorova (Madrid, ES, Aachen, DE)

2.* Variants APOE (rs429358) and TM6SF2 (rs187429064) modify the risk of hepatocellular carcinoma
   S. Buch, H. Innes, H. Nischalke, K. Weiss, D. Gotthardt, J. Rosendahl, F. Lammert, S. Mueller, T. Berg, J. Hampe, F. Stickel (Dresden, Bonn, Heidelberg, Halle Saale, Homburg, Leipzig, DE, Glasgow, GB, Zurich, CH)

3. H2O2-mediated autophagy during ethanol metabolism
   C. Chen, S. Wang, J. Mueller, S. Mueller (Heidelberg, DE)

4. In vitro erythrophagocytosis model to study alcohol-mediated heme turnover
   C. CHEN, S. Wang, J. Mueller, S. Mueller (Heidelberg, DE)

5. Collecting clinical data during Covid 19 Pandemic: survey on alcohol consumption in patients affected by Chronic Autoimmune Liver Diseases.
   M. Delle Monache, M. Carli, L. Nosotti (Rome, IT)

6. Role of bone morphogenetic protein 6 in hepatocellular carcinoma
   U. Eisner, J. Sommer, A. Bosserhoff, C. Hellerbrand (Erlangen, DE)

7. Non-alcoholic Fatty Liver Disease and Insulin Resistance among patients with Type I and Type II Diabetes
   M. Elkady (Benha, EG)

8. Serum Vitamin D in Patients with Non Alcoholic Fatty Liver Disease
   M. Elkady (Benha, EG)

9. A short-term diet withdrawal ameliorates steatohepatitis in DUAL-fed mice
   O. Estevez Vazquez, O. Estevez Vazquez, R. Benede-Ubieto, J. Reissing, T. Bruns, J. Vaquero, C. Liedtke, C. Trautwein, R. Banhares, F. Javier Cubero, Y. A. Nevzorova (Madrid, ES, Aachen, DE)

10.* Dysfunctional inducibility of cytokine secretion in T cells of acute-on-chronic liver failure patients is accompanied by reduced signalling of important transcription factors
   S. Guckenbiehl, M. Langer, H. Schmidt, C. Lange (Essen, München, DE)

11.* Protective role of prostaglandin E2 in diet-induced steatohepatitis
   J. Henkel-Oberlaender, C. Coleman, S. Kuipers, M. Vahrenbrink, K. Joehrens, T. Weiss, G. Pueschel (Kulmbach, Nuthetal, Dresden, Regensburg, DE)

12. Role of endurance training in diet-induced steatohepatitis in rats
   J. Henkel-Oberlaender, K. Buchheim-Dieckow, J. Castro, T. Laeger, K. Joehrens, G. Pueschel (Kulmbach, Nuthetal, Dresden, DE)

13.* Alcohol abstinence improves survival in alcohol-related cirrhosis – even in patients who have already progressed to high-risk portal hypertension
   B. Hofer, B. Simbrunner, L. Hartl, M. Jachs, L. Balcar, R. Paternostro, P. Schwabl, G. Semmler, B. Scheiner, A. Staettermayer, M. Trauner, M. Mandorfer, T. Reiberger (Vienna, AT)

14. MicroRNAs modulate SARS-CoV-2 infection in primary human hepatocytes by regulating the entry factors ACE2 and TMPRSS2
   R. Khanal, N. Heinen, A. Bogomolova, H. Wedemeyer, M. Ott, S. Pfaender, A. Sharma (Hannover, Bochum, DE)

15. mRNA therapeutics for liver diseases: HNF4A mRNA delivery via lipid nanoparticles attenuates liver fibrosis in preclinical models
R. Khanal, T. Yang, M. Poenisch, R. Taubert, B. Engel, E. Jaeckel, T. Cantz, F. Chevessier, A. Balakrishnan, M. Ott, A. Sharma (Hannover, Tübingen, DE)

16. Oral probiotic administration influences pro- and anti-inflammatory cytokines in alcoholic liver disease
R. Knut, L. Sydorchuk, A. Sydorchuk, V. Stepan, I. Sydorchuk, N. Stepan, I. Sydorchuk, I. Hryhorchuk, O. Khomko, R. Sydorchuk, I. Plehutsa, O. Mazurok (Chernivtsi, Storozhynets, UA, Siegen, DE)

17. Rat model of advanced non-alcoholic Steatohepatitis Cirrhosis developing Acute-on-Chronic-Liver failure
N. Kraus, M. Moeslein, R. Schierwagen, C. Ortiz, S. Torres, O. Tyc, C. Hieber, C. Meier, E. Mueller, W. Gu, M. Brol, S. Lotersztajn, R. Flores-Costa, P. Rautou, S. Zeuzem, F. Uschner, J. Claria, J. Trebicka, S. Klein (Frankfurt, DE, Frankfurt, Paris, FR, Barcelona, ES)

18. Rat model of alcoholic liver cirrhosis developing Acute-on-Chronic-Liver failure
N. Kraus, M. Moeslein, R. Schierwagen, C. Ortiz, S. Torres, O. Tyc, C. Hieber, C. Meier, E. Mueller, W. Gu, M. Brol, R. Flores-Costa, S. Loterstajn, P. Rautou, S. Zeuzem, F. Uschner, J. Claria, J. Trebicka, S. Klein (Frankfurt, DE, Barcelona, ES, Paris, FR)

19. Rat Model of Cholestatic Liver Cirrhosis Developing Acute-on-Chronic-Liver failure
N. Kraus, S. Klein, M. Moeslein, R. Schierwagen, C. Ortiz, S. Torres, O. Tyc, C. Hieber, C. Meier, E. Mueller, W. Gu, M. Brol, S. Loterstajn, R. Flores-Costa, P. Rautou, S. Zeuzem, J. Claria, J. Trebicka, F. Uschner (Frankfurt, DE, Paris, FR, Barcelona, ES)

20. A severity-dependent increase of Yes-associated protein expression in liver biopsy tissues from patients with various stages of alcoholic liver disease
Y. Liang (Essen, DE)

21.* Survival in a 10 year prospective cohort of heavy drinkers: Liver stiffness is the best long-term prognostic parameter
J. Mueller, S. Wang, C. Chen, O. Elshaarawy, S. Mueller (Heidelberg, DE)

22.* The role of PNPLA3, MBOAT7 and TM6SF2 during alcohol detoxification: different mechanisms of fibrosis and steatosis development
J. Mueller, S. Wang, C. Chen, O. Elshaarawy, V. Rausch, S. Mueller (Heidelberg, DE)

23.* Deep characterization of the non-alcoholic/alcoholic steatohepatitis in liver specimen demonstrated a specific in-situ immunophenotype: a single center experience.
D. Neureiter, E. Klieser, B. Neumayer (Salzburg, AT)

24.* Association between socioeconomic factors and harmful drinking among immigrants in Rome
L. Nosotti (ITALIA (IT), IT)

25. Expression of Bone Morphogenetic Protein 13 in hepatic stellate cells and hepatic fibrosis
V. Peschl, T. Seitz, C. Hellerbrand (Erlangen, DE)

26.* Serum proteomics predicts the course of alcoholic hepatitis
K. Remih, L. Tyson, S. Atkinson, N. Vergis, L. Krieg, I. Karkossa, K. Schubert, M. Von Bergen, M. Thursz, P. Strnad (Aachen, Leipzig, DE, London, GB, Corvallis, US)

27. Hepatic Th2 immune response correlates inversely with the egg load in parasitic infection
L. Russ, V. Von Buelow, L. Hehr, S. Wrobel, V. Wirth, K. Tabatabai, G. Schramm, T. Quack, C. Grevelding, M. Roderfeld, E. Roeb (Gießen, Giessen, Borstel, DE)

28. Expression of paracrine fibroblast growth factors in liver fibrosis
T. Seitz, K. Freese, W. Thasler, C. Hellerbrand (Erlangen, Planegg/Martinsried, DE)

29.* Transient elastography in community alcohol services: can it detect significant liver disease and impact drinking behaviour?
A. Sheth, M. Subhani, R. Scott, D. Harman, E. Wilkes, M. James, G. Aithal, S. Ryder, I. Guha (Nottingham, GB)

30. Sexual dimorphism in Western-type diet-induced alterations of lipid and bile acid metabolisms in mice
J. Sommer, G. Liebisch, C. Hellerbrand (Erlangen, Regensburg, DE)

31.* Liver endothelial cells induce hepatocellular carcinoma via Hgf secretion
M. Steffani, J. Wang, C. Stoess, H. Friess, C. Mogler, N. Hueser, D. Hartmann (München, Munich, DE)

32. Liver transplant candidates without 6 months alcohol abstinence: clinical and psychological characteristics
M. Sterneck, C. Lienau, A. Buchholz, D. Eickhoff, A. Harberts, P. Huebener, D. Ruether (Hamburg, DE)

33. Does the host's age influence the effectivity of Schistosoma mansoni infection?
J. Strassmann, V. Von Buelow, S. Wrobel, C. Grevelding, T. Quack, K. Kernt (Gießen, DE)

34.* Alcohol-related liver disease mortality and missed opportunities: a UK retrospective observational study
M. Subhani, R. Elleray, J. Bethea, J. Morling R, S. Ryder D (Ng7 2uh, Nottingham, GB)

35. Lipid metabolism in non-alcoholic and alcoholic liver disease
A. Sydorchuk, L. Sydorchuk, V. Stepan, I. Sydorchuk, N. Stepan, I. Sydorchuk, I. Hryhorchuk, R. Knut, O. Plehutsa, R. Sydorchuk (Chernivtsi, UA, Siegen, DE)

36. Comparing gut microbiota changes in NAFLD and alcoholic liver disease
L. Sydorchuk, V. Stepan, A. Sydorchuk, I. Sydorchuk, N. Stepan, I. Sydorchuk, I. Hryhorchuk, R. Sydorchuk, I. Plehutsa, O. Hrushko, R. Knut (Chernivtsi, Storozhynets, UA, Siegen, DE)

37. Ursodeoxycholic acid in alcoholic liver disease
R. Sydorchuk, I. Plehutsa, A. Sydorchuk, N. Stepan, L. Sydorchuk, I. Sydorchuk, V. Stepan, I. Sydorchuk, I. Hryhorchuk, O. Mazurok (Chernivtsi, Storozhynets, UA, Giessen, DE)

38. Subclassification of human hepatic hemangiomas reveals cellular and functional heterogeneity
S. Thomann, S. Sprengel, J. Liermann, M. Toth, C. Sticht, P. Schirmacher (Heidelberg, Mannheim, DE)

39. Janus kinase 2 inhibition by pacritinib is a potential therapeutic target for liver fibrosis and portal hypertension
S. Torres, N. Bachtler, C. Ortiz, N. Kraus, R. Schierwagen, C. Hieber, C. Meier, O. Tyc, F. Uschner, B. Nijmeijer, C. Welsch, S. Zeuzem, J. Trebicka, S. Klein (Frankfurt, DE, Amsterdam, NL)

40. Metabolomic analysis of bacterial infection markers in blood samples of patients with decompensated liver cirrhosis infused with the novel drug VS-01
O. Tyc, F. Uschner, W. Gu, M. Schulz, P. Ferstl, P. Stoffers, K. Staufer, H. Erasmus, J. Masseli, K. Peiffer, F. Finkelmeier, A. Pathil-Warth, J. Bojunga, S. Zeuzem, M. Kabbaj, J. Trebicka (Frankfurt, DE, Zurich, CH)

41. Evidence for alcohol-mediated masked hemolysis in ALD patients and a vicious cycle of hemolysis and iron-mediated liver damage
S. Wang, C. Chen, J. Mueller, S. Mueller (Heidelberg, DE)

42. Liver iron overload in alcoholic liver disease: crosstalk between endothelial cells and hepatocytes in iron regulation
S. Wang, C. CHEN, J. Mueller, S. Mueller (Heidelberg, DE)

43. Functional activation of the insulin-like growth factor 1 receptor IGF1-R and insulin receptor IR following stimulation with parasite antigens
V. Wirth, V. Von Buelow, L. Hehr, L. Russ, A. Baier, G. Schramm, T. Quack, C. Grevelding, M. Roderfeld, E. Roeb (Giessen, Borstel, DE)

44. Infection grade determines intestinal immune reaction in parasitic infection
S. Wrobel, L. Russ, V. Von Buelow, T. Quack, C. Grevelding, M. Roderfeld, E. Roeb (Gießen, Giessen, DE)

45. Efficacy of endoscopic “micro foam” sclerotherapy in acute varicose bleeding from the veins of the esophagus and stomach in patients with alcoholic liver disease
K. Yaroshenko (Dnipro, UA)

46.*The gut microbiome controls liver regeneration through lipid metabolism
Y. Yin, A. Sichler, J. Ecker, J. Wang, Y. Wang, H. Ling, M. Laschinger, H. Friess, D. Harmann, B. Holzmann, K. Janssen, N. Hueser (Munich, DE)

* poster of distinction

REGISTRATION

You can register for the event via our homepage:
www.falkfoundation.org
Registration is only possible online.

You will receive an automatic confirmation of registration by e-mail. Please do also check you spam folder.

CONGRESS FEES

The Online Event is free of charge.

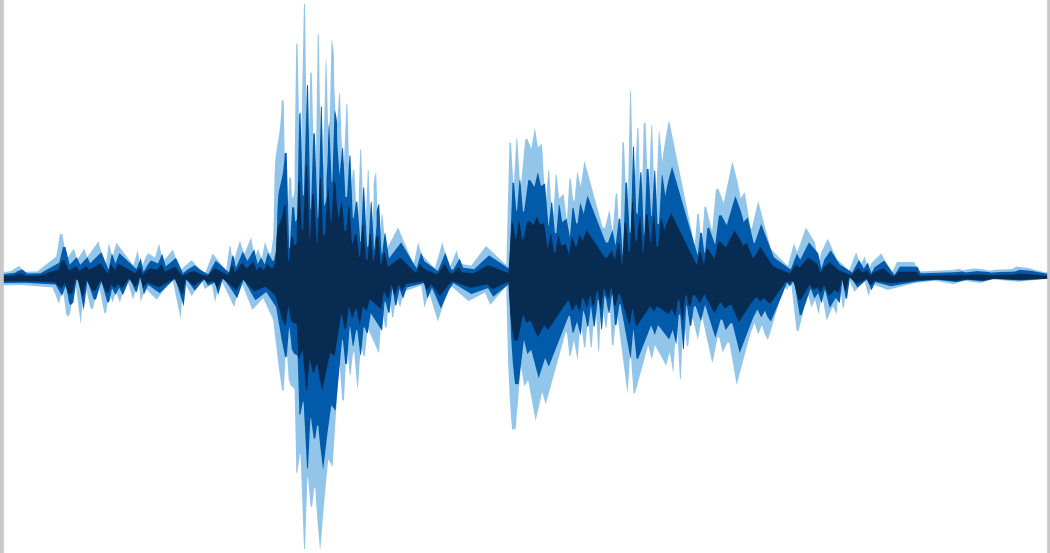
CONFLICTS OF INTEREST

Members of the scientific committee declare the following potential conflicts of interest:

Jonel Trebicka: Versatis, Gore Medical, Grifols, CSL Behring, MSD, Falk, Norgine

Steven Dooley and Sebastian Mueller declare no potential conflicts of interest.

Registration via www.falkfoundation.org or simply scan and participate.



Together we know more. Together we do more.
Falk Foundation e.V. | Leinenweberstr. 5 | 79108 Freiburg | Germany
T: +49 761 15 14 440 | F: +49 761 15 14 460 | E-Mail: meeting@falkfoundation.org
www.falkfoundation.org