



2021 INTERNATIONAL HBV MEETING

BIOLOGY OF THE HEPATITIS B AND D VIRUSES

SEPTEMBER 26 – 30, 2021

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#**HBV**2021

HYBRID EVENT

PROGRAM AT A GLANCE

SUNDAY, SEPTEMBER 26, 2021

17:00 - 17:10 WELCOME ADDRESS

Ourania Andrisani & Adam Gehrin

17:10 - 18:20 DISTINGUISHED AWARD IN HEPATITIS B RESEARCH LECTURES

17:10 - 17:20 **Introduction** by John Tavis

17:20 - 17:50 **Core Insights - inside and outside**
Michael Nassal

17:50 - 18:20 **The development of Hepcludex/bulevirtide: A short story of the long development of a remarkable drug**
Stephan Urban

18:30 - 20:30 WELCOME RECEPTION

MONDAY SEPTEMBER 27, 2021

*Schedule in EDT

8:00 - 8:30	COFFEE
8:30 - 10:30	SESSION 1: PRECLINICAL TARGETS & THERAPIES FOR CHRONIC HEPATITIS B Co-chairs: Stephan Urban & Fabien Zoulim
8:30 - 9:00	Biological Opportunities to use HBx as a Novel Drug Target Fabien Zoulim
9:00 - 10:30	Oral Presentations
9:00 - 9:15	Ribonuclease H Inhibitors Block cccDNA Formation in HBV-Infected Cells and Inhibit Replication of Nucleoside Analog Resistant HBV Strains Molly Woodson
9:15 - 9:30	HIF1α-mediated RelB/APOBEC3B downregulation allows hepatitis B virus persistence Tobias Riedl
9:30 - 9:45	cccDNA inactivation using cytosine base editors Elena Smekalova
9:45 - 10:00	Identification of epigenetic compounds that inhibit hepatitis B virus (HBV) covalently closed circular (ccc) DNA transcription Xiaoyang Yu
10:00 - 10:15	Core Protein-Directed Antivirals and Importin Beta Can Synergistically Disrupt HBV Capsids Christine Kim
10:15 - 10:30	Mechanism and structural basis of small molecule inhibition of PAPD5 and PAPD7 Michael Vaine
10:30 - 11:00	FOUNDATIONS
10:30 - 10:45	Hepatitis B Foundation updates Tim Block
10:45 - 11:00	ICE-HBV Updates Fabien Zoulim

MONDAY SEPTEMBER 27, 2021 – CONTINUED

*Schedule in EDT

11:00 - 12:30	POSTER GALLERY Virology A
11:00 - 12:30	POSTER SESSION I: VIRAL REPLICATION AND cccDNA Moderator: Molly Woodson
11:00 - 11:50	Top Rated Poster Presentations
11:00 - 11:10	Helicases DDX5 and DDX17 regulate hepatitis B virus (HBV) transcriptional fidelity and RNA processing in infected human primary hepatocytes Guillaume Giraud
11:10 - 11:20	Control of APOBEC3B induction and cccDNA decay by NF-κB and miR-138-5p Svenja Schuehle
11:20 - 11:30	FUS promotes HBV cccDNA liquid-liquid phase separation and transcription through G-quadruplexes binding Guillaume Giraud
11:30 - 11:40	Role of LSm complexes in hepatitis B virus replication and antiviral interferon effect Jiazeng Sun
11:40 - 11:50	Secreted hepatitis B virus (HBV) RNA associates with extracellular vesicles in supernatant of infected hepatocytes Delphine Bousquet
11:50 - 12:30	Poster Gallery
12:30 - 13:30	MIDDAY BREAK

MONDAY SEPTEMBER 27, 2021 – CONTINUED

*Schedule in EDT

13:30 - 15:30	SYMPOSIUM: NEW TECHNOLOGIES FOR LIVER RESEARCH Co-Chairs: Ourania Andrisani & Adam Gehring
13:30 - 13:55	Generation of iPSC-derived Human Hepatocytes to Study Liver Disease and Treatment Robert Schwartz
13:55 - 14:20	Liver Organoids as 3-Dimensional Models to Study Liver Disease and Treatment Massimiliano Paganelli
14:20 - 14:45	Single Cell Approaches to Map the Normal Human Liver Sonya MacParland
14:45 - 15:10	Bioinformatic Tools to Study Intrahepatic Signaling Networks Gary Bader
15:10 - 15:30	Q&A
15:30 - 16:00	COFFEE

MONDAY SEPTEMBER 27, 2021 – CONTINUED

*Schedule in EDT

16:00 - 18:00	SESSION 2: APPLICATION OF NEW TECHNOLOGIES AND ADVANCES IN MODELS FOR THE STUDY OF HBV Co-chairs: Alex Ploss & Helene Strick-Marchand
16:00 - 16:30	Experimental Questions Best Suited for Current HBV Mouse Models Helene Strick-Marchand
16:30 - 18:00	Oral Presentations
16:30 - 16:45	An efficient complete genome amplification and Nanopore sequencing method simplifies HDV RNA characterization Caroline Scholtes
16:45 - 17:00	Human Sodium Taurocholate Cotransporting Polypeptide Is Sufficient to Confer Hepatitis B Virus Susceptibility to Woodchuck Hepatic Cells Xupeng Hong
17:00 - 17:15	Humanized NSG-PiZ mice support the study of hepatitis B virus antiviral therapies Keith Jerome
17:15 - 17:30	A cell-based cccDNA reporter assay combined with functional genomics identifies YBX1 as HBV cccDNA host factor and antiviral target Eloi R. Verrier
17:30 - 17:45	Genetic encoding of click-reactive non-canonical amino acids enables fluorescent labelling of hepatitis D virus without impairing viral replication Benno Zehnder
17:45 - 18:00	Amber suppression-mediated genetic code expansion enables site-specific click-labeling and analysis of trafficking of NTCP and its ligands Talisa Richardt

TUESDAY SEPTEMBER 28, 2021

*Schedule in EDT

8:00 - 8:30 COFFEE

8:30 - 10:30 SESSION 3: HBV REPLICATION, GENE EXPRESSION AND EGRESS

Co-chairs: Michael Bouchard & Christine Neuveut

8:30 - 9:00 **Interplay of viral/host factors in the HBV life cycle**
Michael Bouchard9:00 - 10:30 **Oral Presentations**9:00 - 9:15 **Hepatitis B virus rcDNA nuclear import is restricted in murine hepatocytes**
Kaitao Zhao9:15 - 9:30 **Hepatitis B virus X protein interferes with DDX17 on its epigenetic regulation of cccDNA transcription**
Minhui Dong9:30 - 9:45 **Characterization of circulating Hepatitis B virus RNAs in chronic hepatitis B patients**
Doohyun Kim9:45 - 10:00 **Non-canonical Membrane Organization of Woodchuck Hepatitis Virus Spherical Subviral Particles**
Haitao Liu10:00 - 10:15 **Autophagy in HBV DNA replication and viral egress**
Yu-Chen Chuang10:15 - 10:30 **Evidence for long-term association of virion-delivered Hepatitis B virus Core protein with cccDNA independently of viral protein production**
Anna Salvetti

10:30 - 11:00 COFFEE

11:00 - 11:45 KEYNOTE LECTURE 1

introduced by Ourania Andrisani

11:00 - 11:45 **Causes and functional intricacies of molecular heterogeneity in liver cancer**
Xin Wei Wang

TUESDAY SEPTEMBER 28, 2021 – CONTINUED

*Schedule in EDT

11:45 - 13:00 POSTER SESSION II: HCC, INTEGRATION AND TRAFFICKING

Moderator: Anna Salvetti

11:45 - 12:35 **Top Rated Poster Presentations**11:45 - 11:55 **Investigating the impact of HBV DNA integration in the three-dimensional genome organization of hepatocellular carcinoma**
Joao Diogo Dias11:55 - 12:05 **Role of DDX5 in Sorafenib Responsiveness of HBV-related HCCs**
Zhili Li12:05 - 12:15 **Getting to the core: single-cell dynamics and subcellular trafficking of hepatitis B virus Core protein**
Sofia Romero12:15 - 12:25 **Detection of hepatitis B virus-host junction sequences in urine of infected patients**
Selena Lin12:25 - 12:35 **The types and frequency of HBV splice variants differs across phases of chronic hepatitis B infection and disease**
Peter Revill12:35 - 13:00 **Poster Gallery**

13:00 - 14:00 MIDDAY BREAK

TUESDAY SEPTEMBER 28, 2021 – CONTINUED

*Schedule in EDT

14:00 - 15:30 SESSION 4: HBV INTEGRATION, GENOTYPES, AND HCC

Co-chairs: Massimo Levrero & Thomas Tu

14:00 - 14:30 **HBV-mediated hepatocarcinogenesis-from chronic inflammation to epigenetics**
Massimo Levrero

14:30 - 15:30 **Oral Presentations**

14:30 - 14:45 **Liver-resident bystander CD8+ T cells contribute to liver disease pathogenesis in chronic hepatitis D virus infection**
Helenie Kefalakes

14:45 - 15:00 **Structural, bioinformatic and molecular insights of MTA1dE4, the major splice variant of metastatic tumor antigen 1, in promoting early recurrence of HBVrelated HCC**
Yung-Tsung Li

15:00 - 15:15 **An activated, polyclonal liver-resident CD8 T cell population can drive non-specific hepatocyte killing in chronic hepatitis B patients**
Shirin Nkongolo

15:15 - 15:30 **Hepatitis B virus compartmentalization and single cell differentiation in hepatocellular carcinoma**
Eloi R. Verrier

16:00 - 16:30 COFFEE

TUESDAY SEPTEMBER 28, 2021 – CONTINUED

*Schedule in EDT

16:30 - 18:30 SESSION 5: VIRAL ENTRY, cccDNA BIOGENESIS AND HOMEOSTASIS

Co-chairs: Lena Allweiss & Haitao Guo

16:30 - 17:00 **Evidence/Mechanisms of cccDNA maintenance through intracellular recycling pathways**
Haitao Guo

17:00 - 18:30 **Oral Presentations**

17:00 - 17:15 **HBV core SUMOylation represents a novel functional switch to promote HBV cccDNA conversion at PML nuclear bodies**
Samuel Hofmann

17:15 - 17:30 **A role for histone lysine demethylase 4 in regulating HBV replication**
James Harris

17:30 - 17:45 **Template selection of terminal redundancy on HBV negative-strand DNA during positive-strand DNA synthesis and cccDNA formation**
Hu Zhang

17:45 - 18:00 **NTCP oligomerization is initiated downstream of the NTCP-EGFR interaction during HBV internalization**
Kento Fukano

18:00 - 18:15 **Hepatitis B Virus covalently closed circular DNA is completely lost after mitosis of infected cells**
Thomas Tu

18:15 - 18:30 **Therapeutic shutdown of HBV transcripts promotes reappearance of the SMC5/6 complex and cccDNA silencing in vivo without affecting posttranslational modifications of cccDNA-bound histones**
Moritz Calaminus

WEDNESDAY SEPTEMBER 29, 2021

*Schedule in EDT

8:00 - 8:30	COFFEE
8:30 - 10:30	SESSION 6: INNATE IMMUNITY TO HBV INFECTION Co-chairs: Andre Boonstra & Ulrike Protzer
8:30 - 9:00	Distribution of Innate Pattern Recognition Receptors in Human and Mouse Liver Cells Ulrike Protzer
9:00 - 10:30	Oral Presentations
9:00 - 9:15	Clearance of pegylated interferon by Kupffer cells limits NK cell activation and therapy response of patients with HBV infection Akira Nishio
9:15 - 9:30	NK cells limit HBV therapeutic vaccine-induced CD8+T-Cell immunity in a PDL1-dependent manner Mariana O Diniz
9:30 - 9:45	Macrophages activated by hepatitis B virus released IL-1β to downregulate PPARα and FOXO3 in hepatocytes to suppress HBV replication Yumei Li
9:45 - 10:00	Chronic Hepatitis B gives rise to a novel monocyte-derived macrophage population that is associated with liver inflammation Juan Diego Sanchez
10:00 - 10:15	Role of LGP2 in activation of the interferon response and suppression of HDV replication Zhenfeng Zhang
10:15 - 10:30	RIPK1 plays an essential role in the survival of hepatocytes upon HDV infection Gracián Camps Ramón
10:30 - 11:00	COFFEE
11:00 - 11:45	KEYNOTE LECTURE 2 introduced by Adam Gehring
11:00 - 11:45	Immune Trafficking and Regulation in the Liver Matteo Iannacone

WEDNESDAY SEPTEMBER 29, 2021 – CONTINUED

*Schedule in EDT

11:45 - 13:00	POSTER GALLERY Therapy, Immunology, HCC
11:45 - 13:00	POSTER SESSION III: PRECLINICAL TARGETS Moderator: Shirin Nkongolo
11:45 - 12:35	Top Rated Poster Presentations
11:45 - 11:55	Chimeric Capsid Inhibitors Carrying Proteolysis Targeting Moieties Induce Capsid and Core Protein Degradation Daniel Bradley
11:55 - 12:05	Extending the reach of core protein-directed antivirals: HBc dimer binders Adam Zlotnick
12:05 - 12:15	Particulate protein is superior to DNA and mRNA for priming antiviral T-cell responses in a therapeutic hepatitis B vaccine Hélène Anne Kerth
12:15 - 12:25	Preparation and characterization of adjuvant-loaded HBV capsids for therapeutic vaccine against chronic hepatitis B Jinpeng Su
12:25 - 12:35	Preclinical evaluation of CARG-201, a virus-like vesicle expressing HBV middle surface and core antigens, for immunotherapy of patients chronically infected with HBV Timur Yarovinsky
12:35 - 13:00	Poster Gallery
13:00 - 14:00	MIDDAY BREAK

WEDNESDAY SEPTEMBER 29, 2021 – CONTINUED

*Schedule in EDT

14:00 - 16:00 SESSION 7: ADAPTIVE IMMUNITY TO HBV INFECTIONC

Co-chairs: Laura Pallett & Robert Thimme

14:00 - 14:30 **Relationship Between HBV Antigen Load and HBV-specific T cell Function**
Robert Thimme

14:30 - 16:00 **Oral Presentations**

14:30 - 14:45 **Enforced cytotoxic signature of HBV pol455-specific CD8+ T cells in chronic HBV infection**
Kathrin Heim

14:45 - 15:00 **Selective depletion of HBsAg-specific B cells in paediatric HBV infection**
Sabela Lens

15:00 - 15:15 **Immunopeptidome of isolated patient- derived hepatocytes in Hepatitis B viral infection and hepatocellular carcinoma**
Sonja Buschow

15:15 - 15:30 **Liver-resident virus-specific CD8 T cells in a preclinical model of persistent HBV infection**
Miriam Bosch

15:30 - 15:45 **T cell immunity-independent HBV clearance and validation of a new HBV cure strategy in HBV infected uPA/SCID chimeric mice**
Yong-yuan Zhang

15:45 - 16:00 **CD4+ T cell depletion leads to sustained HBV replication in rhesus macaques**
Lauren Rust

16:00 - 16:30 COFFEE

WEDNESDAY SEPTEMBER 29, 2021 – CONTINUED

*Schedule in EDT

16:30 - 18:00 SESSION 8: CO-INFECTION (SARS-COV-2/HDV/HIV) AND PATHOGENESIS

Co-chairs: David Durantel & Marc Lütgehetmann

16:30 - 17:00 **Mechanisms of Accelerated Pathogenesis in HDV co-infected hepatitis B patients**
David Durantel

17:00 - 18:30 **Oral Presentations**

17:00 - 17:15 **Binding of HDV proteins to the epsilon stem loop in HBV RNAs accelerates their degradation and mediates the viral interference of HDV on HBV**
Julie Lucifora

17:15 - 17:30 **CDK8/19 as key positive regulators of hepatitis delta virus replication and transcription**
Angga Prawira

17:30 - 17:45 **Analysis of replication, tropism, pseudo typing, and cell division-mediated spread of novel mammalian delta-like agents**
Gnimah Eva Gnouamozi

17:45 - 18:00 **Lonafarnib antagonizes a dominant-negative effect on HDV infection caused by L-HDAg-encoding virions**
Yi Ni

18:00 - 18:20 CLOSING REMARKS

Ourania Andrisani & Adam Gehring
David Durantel & Helene Strick-Marchand

19:00 - 21:00 SOCIAL EVENT

THURSDAY SEPTEMBER 30, 2021

*Schedule in EDT

7:00 - 9:00	HEPATITIS B FOUNDATION AND ICE-HBV COMMUNITY FORUM Moderator: Jordan Feld
7:00 - 7:30	Networking Breakfast & Welcome Remarks Timothy Block
7:30 - 8:15	SESSION I: Update on the Global Response to HBV HBV Science 101, Thomas Tu The Road to HBV Cure – New Findings, John Tavis Towards HBV Elimination, Chari Cohen
8:15 - 8:55	SESSION II: Panel Discussion on the Challenge of Hepatitis B in Canada The HBV epidemic in Canada, Carla Coffin Participants: Karen, Olukunle, David, Hassan, Jeffrey
8:55 - 9:00	Closing Remarks Harry Janssen
9:15 - 13:00	HEPATITIS B FOUNDATION AND ICE-HBV COMMUNITY FORUM HBV Cure: The Mechanisms Behind Combination Therapies
9:15 - 9:20	Opening Remarks
9:20 - 9:35	Combinations of direct acting antivirals to decrease the cccDNA pool Haitao Guo
9:35 - 9:50	Combinations of compounds that stimulate & enhance function of HBV-specific B/T cells Adam Gehring
9:50 - 10:05	Pre-clinical evidence for combination strategies Maura Dandri
10:05 - 10:20	Q&A
10:20 - 10:40	COFFEE BREAK
10:40 - 10:55	Clinical trial design for combination therapies Norah Terrault
10:55 - 11:10	Use of novel biomarkers to assist combination trials Massimo Levrero
11:10 - 11:25	Flares in clinical trials: Who is good ? Who is bad? Grace Wong
11:25 - 11:40	HBV and HDV cross utility for drug development Heiner Wedemeyer

THURSDAY SEPTEMBER 30, 2021

*Schedule in EDT

11:40 - 12:00	Q&A
12:00 - 12:45	ROUND-TABLE DISCUSSION: THE INDUSTRY PERSPECTIVE ON COMBINATION THERAPY Moderator: Harry Janssen Oliver Lenz Doug Mayers Tse-I Lin William Delaney Michael Sofia



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