



HGSC 2023 | 02–05 DECEMBER 2023

HELICOBACTER PYLORI GENOMICS, SIGNALING AND CARCINOGENESIS

CASTLE HIRSCHBERG | BEILNGRIES | GERMANY

HGSC - Scientific program (as of 15 August 2023)

Scientific program • Saturday, 2 December

12:00–18:00 Registration and poster set-up

13:00–14:00 Guided tour in Castle Hirschberg

14:00 Opening of the conference by the conference chairs:
S. Wessler (Salzburg/Austria); B. Linz (Erlangen/Germany) and S. Backert (Erlangen/Germany)

Keynote lecture

Chair Peter Malfertheiner (Magdeburg/Germany)

H. pylori in the modern and post-modern ages
Martin Blaser (Newark/USA)

15:00–15:30 Coffee break

15:30–17:50 Session 1 – *H. pylori* virulence factors

Chair Markus Gerhard (Munich/Germany)

15:30 Structure and *in vivo* actions of the *cag* Type IV secretion system
Timothy Cover (Nashville/USA)

15:50 Structural insights into CagI function in the *Helicobacter pylori* *cag* Type IV secretion system
Laurent Terradot (Lyon/France)

16:10 The 'Ins and Outs' of *H. pylori* DNA transport through the *cag* T4SS
Carrie L. Shaffer (Lexington/USA)

16:30 *Helicobacter pylori* evolution and pathogenesis in Asia
Yoshio Yamaoka (Oita/Japan)

16:50 CagA functions in immune cells
Silja Wessler (Salzburg/Austria)

17:10 CagA-dependent stromelysin expression in *H. pylori* infection
Dionyssios Sgouras (Athens, Greece)

17:30 Rearrangements in the *cagY* gene associated with gastric cancer
Javier Torres (UMAE, Mexico)

18:00–19:00 Get-Together dinner at the castle

19:00–20:00 Session 1 – *H. pylori* virulence factors



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Chair	Saskia Erttmann/Thomas F. Meyer (Kiel/Germany)
19:00	<i>H. pylori</i> vacuolating cytotoxin A and intestinal metaplasia in the human gastric mucus Karen Robinson (Nottingham, UK)
19:20–20:00	Short talks of session 1 – <i>H. pylori</i> virulence factors
19:20	Role of the CagY antenna projection in <i>Helicobacter pylori</i> Cag type IV secretion system activity Sirena Tran (Nashville, USA)
19:30	<i>Helicobacter pylori</i> γ -glutamyltransferase relates to changes in bacterial metabolism important for colonization Sonja Fuchs (Munich, Germany)
19:40	Structure and function of previously unseen components of bacterial flagellar motor Anna Roujeinikova (Melbourne, Australia)
19:50	Cytotoxin-associated gene A regulates STAT3 signaling in <i>Helicobacter pylori</i> infected macrophages Sebastian Diechler (Salzburg, Austria)
20:00–21:30	Poster session 1

Scientific program • Sunday, 3 December

09:00	Keynote lecture
Chair	Michael Naumann (Magdeburg/Germany)
	<i>H. pylori</i> CagA, BRCAness, and gastric cancer. Masanori Hatakeyama (Tokyo, Japan)
09:45–12:00	Session 2 – <i>H. pylori</i> and carcinogenesis
Chair	Cynthia Sharma (Würzburg/Germany)
09:45	Metal and malignancy: How iron influences <i>H. pylori</i> -induced gastric carcinogenesis Richard Peek (Nashville, USA)
10:05–10:35	Coffee Break
10:35	<i>H. pylori</i> carcinogenesis: host and bug changes during stomach cancer development Nina Salama (Seattle/USA)
10:55	A single SNP in <i>H. pylori</i> promotes gastric cancer development Steffen Backert (Erlangen/Germany)
11:15	Oncogenic properties of <i>H. pylori</i> infection and the USF1 transcription factor: impact in gastric carcinogenesis



Eliette Touati (Paris/France)

11:35 Murine gastric organoids as model systems for studying *H. pylori*-induced gastric carcinogenesis
Anne Müller (Zurich, Switzerland)

12:00–13:00 Lunch Break

13:00-15:00 Session 2 – *H. pylori* and carcinogenesis

Chair Michael Vieth (Bayreuth, Germany)

13:00 *H. pylori* and colon cancer – from epidemiologic association to mechanistic insight
Markus Gerhard (Munich/Germany)

13:20 The hippo/YAP signalling pathway in *H. pylori*-induced carcinogenesis
Christine Varon (Bordeaux/France)

13:40 Stem-cell driven models to understand epithelial response to infections and cancer initiation
Francesco Boccellato (Oxford/UK)

14:00 Molecular insights into *Helicobacter pylori*-induced gastric inflammation and cancer: new strategies for intervention
Keith Wilson (Nashville/USA)

14:20 *Helicobacter pylori* attachment-blocking antibodies and vaccine in protection against gastric disease and cancer
Thomas Borén (Umea/Sweden)

14:40-15:00 Short talks of session 2 – *H. pylori* and carcinogenesis

14:40 The Rspo3/YAP signaling cascade is activated upon epithelial injury and promotes *Helicobacter pylori*-driven pre-malignant epithelial transformation
Anne-Sophie Fischer (Berlin, Germany)

14:50 Evaluation of a multi-epitope vaccine candidate against *Helicobacter pylori*
Tobias Giese (Munich, Germany)

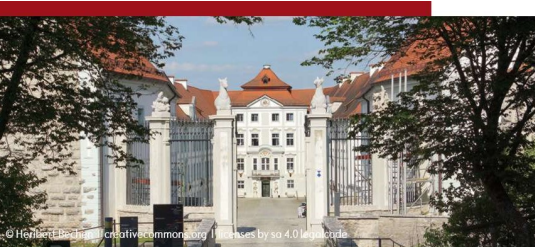
15:00–15:30 Coffee Break

15:30–18:00 Session 3 – *H. pylori* host adaptation

Chair Georg Häcker (Freiburg/Germany)

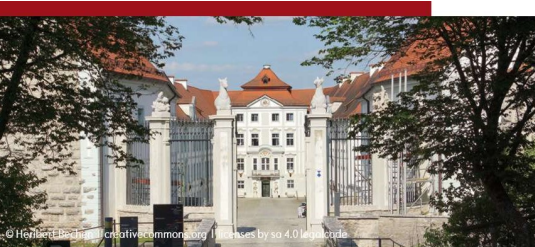
15:30 *H. pylori* tropism to pit cells dependent on urea chemotaxis
Sina Bartfeld (Berlin/Germany)

15:50 Host adaptation strategies of *H. pylori*
Hitomi Mimuro (Osaka/Japan)



- 16:10 Microbial Hideouts in the epithelium link *H. pylori* persistence and pathogenesis
Manuel Amieva (Stanford/USA)
- 16:30 *Helicobacter pylori* HopQ and CEACAM interaction: more than a binding affair
Raquel Mejías-Luque (Munich/Germany)
- 16:50 Defining new molecular pathways in stomach B-cell lymphoma associated with chronic *Helicobacter* infection
Richard Ferrero (Melbourne/Australia)
- 17:10 Functional evolution of innate immune interactions of *Helicobacter pylori*: selection pressure and consequences
Christine Josenhans (Munich/Germany)
- 17:30-18:00 Short talks of session 3 – *H. pylori* host adaptation
- 17:30 Roles of *Helicobacter pylori* heterogeneity in transmission
Sacheera Angulmaduwa (Seoul, Korea)
- 17:40 Beyond cellular vacuolation: *Helicobacter pylori* VacA toxin alters host cell taurine metabolism
Mandy Westland (Nashville, USA)
- 17:50 *Helicobacter pylori* employs a general protein glycosylation system for the modification of outer membrane adhesins
Mou-Chieh Kao (Hsinchu, Taiwan)
- 18:00–19:00 Conference Dinner
- 19:00–21:30 Poster session 2

- 09:00–10:20 Session 4 – *Helicobacter* genomics / Pathogenomics
Chair Daniel Falush (Shanghai/China)
- 09:00 Establishing a global *H. pylori* database, what can we learn from 10,000 genomes?
Kaisa Thorell (Göteborg/Sweden)
- 09:20 Convergent mutations, truncation mutations, and *H. pylori* pathoadaptation
Sujay Chattopadhyay (Kolkata, India)
- 09:40 The *Helicobacter pylori* Genome Project: Highlights of Primary Findings
Constanza Camargo (Bethesda/USA)



Chair Michael Sigal (Berlin/Germany)

10:30 Multi-*cagA* genotypes and its gene amplification
Jungheon Cha (Seoul, Korea)

10:50 Ecotypes and pathotypes of *Helicobacter pylori*
Daniel Falush (Shanghai/China)

11:10 *H. pylori* and human migrations
Yoshan Moodley (Thohoyandou/South Africa)

11:30 *Helicobacter pylori* in ancient human remains
Frank Maixner (Bolzano/Italy)

11:50 Deciphering prophages in the genus *Helicobacter*
Filipa Vale (Lisbon, Portugal)

Chair Michael Sigal (Berlin/Germany)

13:00 *Helicobacter pylori* DNA methyltransferases: possible role(s) in pathogenesis and natural transformation
Rao Desirazu (Bengaluru, India)

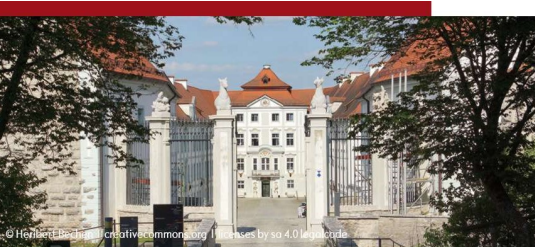
13:10 Roles of *oipA* phase variation on *Helicobacter pylori*-induced cell elongation
Ashansa Pamodhi Ramanayake Mudiyanse (Seoul, Korea)

13:20 Methyloome evolution through lineage-dependent selection in the gastric pathogen *Helicobacter pylori*
Sebastian Suerbaum (Munich, Germany)

13:30 Study of the resistome and virulome of *Helicobacter pylori* by NGS approach using DNA Capture technology
Philippe Lehours (Bordeaux, France)

Chair Marino Venerito (Magdeburg/Germany)

13:40 Gastric stem cell responses to *H. pylori* Infection
Michael Sigal (Berlin/Germany)



- 14:00 Unexpected effects of *Helicobacter pylori*-derived PAMPs on innate immune cells
Jutta Horejs-Höck (Salzburg/Austria)
- 14:20 Mechanisms underlying inflammation and persistence of *H. pylori* infections
Saskia Erttmann/Thomas F. Meyer (Kiel/Germany)
- 14:40 Complement – a major challenge for *H. pylori* colonisation
Karen Ottemann (Santa Cruz/USA)
- 15:00–15:30 Coffee Break**
- 15:30–16:15 Short talks of session 5 – Inflammation and innate immunity**
Chair Marino Venerito (Magdeburg/Germany)
- 15:30 Inhibition of the Oncogenic Stress Response by *H. pylori*
Elena Zaika (Miami, USA)
- 15:40 Microenvironment-dependent stress response signaling in *Helicobacter pylori*-infected cells
Behzad Amirkhizi (Magdeburg, Germany)
- 15:50 Role of IgA in immune control of *H. pylori* infection
Anne Müller (Zurich, Switzerland)
- 16:00 Effects of ADP-heptose on human primary dendritic cells
Theresa Neuper (Salzburg, Austria)
- 16:30–20:15 Excursion to the Christkindl market in Nuremberg
(Return to Castle Hirschberg at approx. 21:30)**



Chair Sina Bartfeld (Berlin/Germany)

09:00 Exploring small RNAs and small proteins in *H. pylori*
Cynthia Sharma (Würzburg/Germany)

09:20 The initiation of mitochondrial signals by *Helicobacter pylori*
Georg Häcker (Freiburg/Germany)

09:40 The C-terminal region of *Helicobacter pylori* SecA – a key domain for fine-tuning protein export
Joanna Skorko-Glonek (Gdansk/Poland)

10:30 *Helicobacter pylori* vacuolating cytotoxin A (VacA) hijacks host cell endosomes for intracellular activation
Terry Kwok (Melbourne, Australia)

10:40 CD8+ T cells recognize CagA-derived epitopes and mediate pathogen control in *Helicobacter pylori* infection
Maximilian Koch (Munich, Germany)

Chair Frank Maixner (Bolzano/Italy)

10:50 Interaction of *H. pylori* with other bacteria in human gastric carcinogenesis
Peter Malfertheiner (Magdeburg/Germany)

11:10 The role of other gastric microbiota than *H. pylori* for health and disease
Christian Schulz (Munich/Germany)

11:30 CagA determines the microbiome changes and risk of colorectal cancer elicited by *Helicobacter pylori* infection
Veronika Engelsberger (Munich, Germany)

11:40 Dual RNA fluorescent in situ hybridization and immunofluorescence reveals the spatial distribution of *Helicobacter pylori* and non-*H. pylori* bacteria in gastric mucosal biopsies during gastric intestinal metaplasia
Amanda Rossiter (Birmingham, UK)



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11:50 *H. pylori* and *E. coli* cooperation and role of host DNA methylation in gastric tumorigenesis
Emma Bergsten (Paris, France)

12:00–13:00 Lunch Break

13:00–13:40 Session 8 – non-pylori Helicobacter

Chair Yoshan Moodley (Thohoyandou/South Africa)

13:00 The *H. hepaticus* cytolethal distending toxin modulates cell differentiation and elicits epithelial to mesenchymal transition
Armelle Menard (Bordeaux/France)

13:20 *H. smintopsis* from the Australian fat-tailed dunnart
Bodo Linz (Erlangen/Germany)

13:40-13:50 Short talk session 8 – non-pylori Helicobacter

13:40 *Helicobacter acinonychis* adaptation to the stomach of the large felines
Iryna Tkachenko (Umea, Sweden)

13:50 **Round-Table for general discussion, summing up and prospects with all invited speakers**
Chairs Martin Blaser (Newark/USA), Masanori Hatakeyama (Tokyo, Japan)

14:15 Poster and short talk prize presentation
Chairs S. Wessler (Salzburg/Austria), B. Linz (Erlangen/Germany) and S. Backert (Erlangen/Germany)

14:30 Shuttle Bus Departure