



32nd Symposium on Glycosaminoglycans

September 18th – 20th, 2025



Organizers:

Marco Guerrini and Antonella Bisio

Istituto di Ricerche Chimiche e Biochimiche "G. Ronzoni", Milan
Italy

Gerd Bendas and Martin Götte

University of Bonn University of Münster
Germany

Welcome to Villa Vigoni 2025!

The series of these traditional symposia continues in the prestigious venue of Villa Vigoni. As per tradition, distinguished specialists from all over the world are invited to discuss both current and emerging topics of interest in the fields of chemistry, biochemistry, biology, pharmacology, and in the clinical applications of heparin and other glycosaminoglycans. In particular, sessions devoted to the role of glycosaminoglycans in malignancy, or to heparanase inhibitors as well as to the advances in analytical approaches, have been considered. The subjects of interest cover biosynthesis, structural characterization and protein interactions, biological functions, pharmaceutical and clinical aspects including anti-inflammatory and anti-tumor activities. As for the previous year, a poster session is also planned aimed at young researchers.

The symposium will have a hybrid character, allowing both in-presence and virtual participation. However, as per tradition, participation is only by invitation. A sufficient time will be allotted for in-depth discussion. The informal, workshop-like character of the symposium and the pleasant surroundings of the Villa traditionally stimulate after-session interactions among participants as in the past 31 editions.

Marco, Antonella, Gerd and Martin

Honorary Member

Job Harenberg

Scientific Board

Annamaria Naggi, Marco Guerrini, Antonella Bisio, Roland Krämer, Gerd Bendas, Martin Götte, Susanne Alban, Kay Grobe, Jawed Fareed, Ram Sasisekharan.

Scientific Secretary

Antonella Bisio

Thursday, September 18th 2025

13.00 – 14.30 **Lunch**

15.00 – 15.10 **Welcome address: Marco Guerrini**

GLYCOSAMINOGLYCANS AND METABOLIC ASPECTS

Moderator: **Ulf Lindahl**

15.10 – 15.30 **Jeffrey Esko**, San Diego

Antithrombin-Binding Heparan Sulfate is Ubiquitous.

15.30 – 15.50 **Marcelo Lima**, Keele

GTPases and Vesicle Adapter Proteins as Regulators of Heparan Sulfate Biosynthesis.

15.50 – 16.10 **Alan Cartmell**, York

The Metabolism of Chondroitin Sulfate by the Gut Symbiont *Bacteroides Thetaiotaomicron*.

16.10 – 16.30 **Discussion**

16.30 – 16.50 **Coffee and tea**

PERSPECTIVES IN GLYCOSAMINOGLYCAN RESEARCH

Moderator: **John Gallagher**

16.50 – 17.10 **Britta Trappmann**, Münster

Impact of Heparin Flexibility within the Extracellular Matrix on the Bioactivity of Tethered Vascular Endothelial Growth Factor.

17.10 – 17.30 **Fengshan Wang**, Jinan

Establishment of Non-Animal Source Heparin Synthesis Systems.

17.30 – 17.50 **Christian Gorzelanny**, Hamburg

The Interaction between Heparan Sulfate and Chitinase-3-Like 1 Contributes to Innate Immune Signalling.

17.50 – 18:10 **Discussion**

19.00 **Cocktail and Dinner**

HYALURONIC ACID: BIOLOGY AND APPLICATION

Moderator: **Nikos Karamanos**

- 9.00 – 9.20 **Fabio Neggiani**, Pisa
Hyaluronic Acid in Medical Devices: from Molecular Properties to Industrial Challenges.
- 9.20 – 9.40 **Alberto Passi**, Varese
Advances and Innovations in Hyaluronan: Unlocking the Future Medical Applications.
- 9.40 – 10.00 **Laura Russo**, Milan
Glycosaminoglycan Functionalized Biomaterials.
- 10.00 – 10.20 **Sabrina Bertini**, Milan
Ensuring the Quality of Hyaluronic Acid: Orthogonal Characterization Strategies.
- 10.20 – 10.40 **Discussion**
- 10.40 – 11.00 **Coffee and tea**

GLYCOSAMINOGLYCAN IN HEALTH AND HUMAN DISEASE

Moderator: **Job Harenberg**

- 11.00 – 11.20 **Gerd Bendas**, Bonn
Epigenetic Approach to Modify HSPGs: Consequences on Hematology and Tumor Growth.
- 11.20 – 11.40 **Lubor Borsig**, Zurich
Heparins versus Small Molecular Antithrombotics in the Multifaceted Nature of Cancer-Associated Thrombosis
- 11.40 – 12.00 **Jessica Onyeisi**, Münster
Syndecan-4 in Breast Cancer Pathophysiology: Mechanisms and Implications.
- 12.00 – 12.20 **Discussion**
- 13.00 – 14.00 **Lunch**

HEPARANASE AND ITS INHIBITORS

Moderator: **Gerd Bendas**

- 14.20 – 14.40 **Israel Vlodavsky**, Haifa
Heparanase-2: Advances and Paradigms.
- 14.40 – 15.00 **Jin-ping Li**, Uppsala
Semi-Synthetic Heparanase Inhibitors.
- 15.00 – 15.20 **Giuliana Cassinelli**, Milan
Prodifferentiating and immunomodulatory activities of the non-anticoagulant heparin CX-01 (dociparstat) counteract retroperitoneal liposarcoma dedifferentiation.
- 15.20 – 15.50 **Discussion**

15.50 – 17.10

POSTER SESSION
with coffee and tea

HEPARINOIDS: PHARMACOLOGICAL AND METHODOLOGICAL ASPECTS

Moderator: **Antonella Bisio**

- 17.10 – 17.30 **Jawed Fareed**, Chicago
Profibrinolytic Actions of Defibrotide and its Fractions.
- 17.30 – 17.50 **Bernd Diehl**, Köln
Detection of Unknown Process-Related Minor Components in Heparin API Beyond OSCS.
- 17.50 – 18.10 **Eduardo Stancanelli**, Raleigh
Accurate Hyaluronan Quantification Using Authentic ¹³C-Labeled Disaccharide.
- 18.10 – 18.30 **Discussion**
- 19.30 **Dinner**

GLYCOSAMINOGLYCAN AND PROTEIN INTERACTIONS

Moderator: **Ed Yates**

- 9.00 – 9.20 **Mark Skidmore**, Keele
New Insights into *Bacteroides eggerthii* Heparin Lyase I.
- 9.20 – 9.40 **Jurij Froese**, Münster
Charting the Invisible HS Highways for Protein Transport.
- 9.40 – 10.00 **Michela Parafioriti**, Milan
Heparin/Heparan Sulfate Interactions with SARS-CoV-2 Proteins: Molecular Insights and antiviral Implications.
- 10:00 – 10:20 **Discussion**
- 10:20 – 10.40 **Coffee and tea**

HEPARINOIDS: CHALLENGING AND ADVANCES

Moderator: **Roland Krämer**

- 10.40 – 11.00 **Rudolf Gruber**, Geretsried
Pentosan Polysulfate and Platelet Factor 4: Characterization of the Interaction.
- 11.00 – 11.20 **Susanne Alban**, Kiel
Interaction of Sulfated Glycans with the Complement and Contact System.
- 11.20 – 11.40 **Maura Poli**, Brescia
Heparin and Heparan Sulfate in Iron Metabolism.
- 11.40 – 12.00 **General discussion**
- 12:00 – 12:10 **Closing remarks: Martin Götte**
- 12.30 – 13.30 **Lunch**

POSTERS

- **Phoebe Griffiths**, Keele
Targeting MRSA Biofilm Integrity with Modified Heparin Mimetics.
- **Alexandra Großdorf**, Hamburg
Single Molecule Force Spectroscopy to Characterize Heparan Sulfate at Cell Surfaces.
- **Marco Mandalari**, Milan
A Sticky Situation: the Role of Heparan Sulfate in SARS-CoV-2 Variant Recognition.
- **Daniel Orlov**, Münster
Hpse2 and Syndecan-1 in Breast Cancer.
- **Ethan Saunders**, Keele
Inflammatory Profiling of a Polysaccharide Library Identifies Distinct Cytokine Responses in Human PBMCs.
- **Marie Schulz-Fincke**, Bonn
Targeting Breast Cancer Glycocalyx Through Epigenetic Modulation of Syndecans and Beyond.
- **Arianna Somma**, Milan
Structural Peculiarities of Bovine, Ovine and Porcine Heparins. Focus on the 3-O-Sulfated Glucosamine Containing Sequences.
- **Alena Teigeler**, Kiel
Fraction-Dependent Activity Differences between Original and Follow-on Pentosan Polysulfates.

Location of the Symposium

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Acknowledgments

