



PROGRAM

21st Symposium on Glycosaminoglycans

**The role of glycosaminoglycans and of other coagulation inhibitors
in blood coagulation, tumor and immunology**

September 19th – 21st, 2013

Organizers:

Job Harenberg

Clinical Pharmacology, Faculty of Medicine
Mannheim

Giangiaco­mo Torri

„G. Ronzoni“ Institute for Chemical and Biochemical Research,
Milan

Welcome to Villa Vigoni 2013

Dr. Giangiacomo Torri followed several years ago Professor Benito Casu as director of the Ronzoni Institute. Now, Professor Casu decided to retire from also other professional activities including the co-organization of the Glycosaminoglycan Symposia at Villa Vigoni. Dr. Giangiacomo Torri takes over co-organization of the German-Italian symposia from this year on. On behalf of all participants of the 20 Symposia I would like to thank warmly Professor Casu for his outstanding achievements leading to the successful conduction of these symposia.

As for the past twenty editions, the 21st Glycosaminoglycan Symposium will take place in Villa Vigoni (Lovenno, Lake Como). Eminent specialists from all over the world are invited to contribute to discussion of topics of actual or emerging interest in the field of chemistry, biochemistry, biology, pharmacology, and clinical applications of heparin and other glycosaminoglycans. Both basic and applied aspects will be covered and discussed, with about twenty percent of participants being associated with industrial companies. Participation in the symposium (only by invitation) is limited to a maximum of 70 participants.

This year, the topics selected for discussions include: approaches to establish structure-activity relationships with special emphasis on inflammation and cancer, low- and ultra-low molecular weight heparins and heparin oligosaccharides, enzymes for biosynthetic editing of, and analytical tools for, glycosaminoglycans, biotechnological heparins and heparan sulfates, proteoglycans in health and disease, and clinical pharmacology assessment of heparins and non-GAG antithrombotic agents.

Keynote speakers will outline the state-of-the-art in each field and present novel results. A sufficient time will be allotted to in-depth discussion. The informal, workshop-like character of the symposia and the pleasant surroundings of the villa traditionally stimulate also after-session interactions among participants.

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Main topics

Malignancy

Glycosaminoglycans, heparins, low- and very low- molecular-weight heparins, synthetic oligosaccharides, new antithrombotic drugs, thrombin inhibitors and cancer.

Inflammation

Interactions with growth factors, heparanase, and other proteins overexpressed in inflammation.

Characterization of glycosaminoglycans

Anticoagulant assays, nuclear magnetic resonance, mass spectrometry, capillary electrophoresis, new enzymatic approaches, new biological assays, heparin contaminants, standardization and harmonization of methods.

Scientific board

G. Torri, J. Harenberg, R. Sasisekharan, B. Casu

Scientific Secretary

A. Naggi

Thursday, September 19th, 2013, afternoon

14.30-14.40	<p>J. Harenberg , Mannheim and G. Torri, Milan: Welcome address</p> <p>SYNTHETIC GLYCOSAMINOGLYCANS</p> <p>Moderator: M. Petitou</p>
14.40-15.10	<p>J. Liu, Chapel Hill, NC Synthesis of homogenous and reversible low-molecular weight heparins</p>
15.10-15.30	<p>K. Sugahara, Sapporo Wobble chondroitin sulfate oligosaccharide motifs and mass production of oligosaccharides</p>
15.30-15.50	<p>J. Kandasamy, Berlin Automated solid phase synthesis of glycosaminoglycans</p>
15.50-16.10	<p>Discussion</p>
16.20-16.40	<p>Coffee and Tea</p>
	<p>SYNTHETIC GLYCOSAMINOGLYCAN MIMETICS</p> <p>Moderator: R. Sasisekharan</p>
16.40-17.00	<p>J. Turnbull, Liverpool Novel therapeutic applications of modified and synthetic heparins</p>
17.00-17.20	<p>V. Ferro, Brisbane New HS mimetics with virucidal activity.</p>
17.20-17.40	<p>S. Alban, Kiel Potential and challenges of sulfated polysaccharides from macroalgae</p>
17.40-18.00	<p>Discussion</p>

Friday, September 20th 2013, morning

	<p style="text-align: center;">HEPARIN AND OTHER GLYCOSAMINOGLYCANS IN MALIGNANCY</p> <p style="text-align: center;">Moderator: C. Kirchmaier</p>
9.00-9.20	<p>P. Arosio, Brescia Heparins are strong inhibitors of hepcidin and modify iron homeostasis <i>in vivo</i></p>
9.20-9.40	<p>Y. Yang, Mannheim Heparanase-1 is a DNA-binding protein controlling NF-kB-related gene expression</p>
9.40-10.00	<p>M. Götte, Münster Role of cell surface heparan sulfate proteoglycans in cancer metastasis and resistance to radiotherapy</p>
10.00-10.20	<p>G. Nowak, M. Lopez Zambrano, Jena, Caracas Antitumor therapy with DTI's-first experience in patients</p>
10.20-10.40	<p>Discussion</p>
10.40-11.00	<p>Coffee and Tea</p>
	<p style="text-align: center;">HEPARIN AND OTHER GLYCOSAMINOGLYCANS</p> <p style="text-align: center;">Moderator: U. Lindahl</p>
11.00-11.20	<p>J.-P. Li, Uppsala Heparan sulfate: Jack of all trades?</p>
11.20-11.40	<p>J. Esko, S. Diego, CA Heparan sulfate: Light at the end of the chain</p>
11.40-12.00	<p>C. Viskov, Paris Antithrombin sequences in heparinoids. What's new?</p>
12.00- 12.20	<p>Discussion</p>

Friday, September 20th 2013, afternoon

	<p style="text-align: center;">GLYCOSAMINOGLYANS IN TUMOR GROWTH</p> <p style="text-align: center;">Moderator: J. Gallagher</p>
14.30-14.50	G. Bendas , Bonn Impact of (latent) heparanase on adhesion signalling of melanoma cells
14.50-15.10	L. Borsig , Zurich Heparin attenuates metastasis of melanoma through inhibition of VLA4 integrins
15.10-15.30	I. Vlodaysky , Haifa Impact of host- vs tumor- derived heparanase on cancer progression
15.30-15.50	Discussion
15.50-16.10	Coffee and Tea
	<p style="text-align: center;">STRUCTURAL ANALYSIS AND DIAGNOSTIC APPLICATIONS OF GLYCOSAMINOGLYCANS</p> <p style="text-align: center;">Moderator: G. Torri</p>
16.10-16.30	A. Alekseeva , Milan Glycol-split non-anticoagulant heparins. NMR/MS approach for their structural characterization
16.30-16.50	R. Krämer , Heidelberg Heparin Red - from laboratory development to a commercial Heparin test
16.50-17.10	A. Raw , FDA, Silver Spring, MD Scientific considerations in the review and approval of generic enoxaparin in the United States
17.10-17.30	M. Guerrini , Milan Structural heterogeneity of heparin: new NMR approaches to analyse structural diversity.
17.30-17.50	D. Keire , FDA, St Louis MO Adverse event relevant bioassays for heparin quality screening.
17.50-18.10	Discussion

Saturday, September 21st 2013, morning

	<p style="text-align: center;">NEW ANTITHROMBOTICS</p> <p style="text-align: center;">Moderator: A. Stemberger</p>
9.00-9.20	V. Laux , Wuppertal Comparison of new antithrombotics
9.20-9.40	J. Harenberg , Mannheim Determination of novel anticoagulants in different human matrices – from bench to bedside
9.40-9.20	Discussion
10.00-10.20	Coffee and Tea
	<p style="text-align: center;">STRUCTURAL INTERACTION of GLYCANS</p> <p style="text-align: center;">Moderator: B. Mulloy</p>
10.20-10.40	Z. Shriver , Boston Multivalent display of glycans in liposomes as potent inhibitors of viral attachment and internalization
10.40-11.00	N. Veraldi , Milan Heparansulphate from human cartilage
11.00-11.20	S. Bertini , Milan PF4-heparin interaction
11.20-11.40	Discussion
	<p style="text-align: center;">INVITED LECTURE</p> <p style="text-align: center;">Moderator: J. Harenberg</p>
11.40-12.05	P. Prandoni , Padova Implications of an unexpected association of venous and arterial thromboembolism
12.05-12.10	Closing remarks: G. Torri / J. Harenberg

General Information

Thursday, September 19th, 2013

13.00 -14.00: Lunch in Villa Vigoni
19.00: Dinner in Villa Vigoni

Friday, September 20th, 2013

8.00 - 9.00: Breakfast
13.00 -14.00: Lunch in Villa Vigoni
19.00: Dinner in Villa Vigoni

Saturday, September 21st, 2013

8.00 - 9.00: Breakfast
12.30 - 13.30: Lunch in Villa Vigoni

Location of the Symposium:

"Villa Vigoni e.V."
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