



16th Symposium on Glycosaminoglycans

New developments of anticoagulant and non-anticoagulant glycosaminoglycans and of other coagulation inhibitors

September 18th - 20th, 2008

Organizers:

Job Harenberg

4th Department of Medicine Faculty of Clinical Medicine
Mannheim

Benito Casu

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

Welcome to Villa Vigoni 2008

As for the past fifteenth editions, the 16th Glycosaminoglycan Symposium will take place in Villa Vigoni (Lovenno, Lake Como). Started as Italian-German meetings (the villa is owned by the German Government), the symposia have become more and more international, with eminent specialists from all over the world 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, enzymatic cleavage of glycosaminoglycans, and clinical pharmacology assessment of heparins and non-GAG antithrombotic agents. The sensitive issue of heparin contaminants and the problem of the development of generic LMW-Heparins will be focused in workshop sessions. 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

Anticoagulants

glycosaminoglycans, heparins, hirudins, low-molecular-weight heparins, pentasaccharide, new antithrombotic drugs, thrombin inhibitors

Characterization of glycosaminoglycans

Anticoagulant assays, nuclear magnetic resonance, mass spectrometry, new biological assays, heparin contaminants, standardization and harmonization of methods

Structure-function relationships

Drug interactions of anticoagulants, glycosaminoglycans and platelet factor 4, glycosaminoglycans, growth factors and heparanase, glycosaminoglycans and inflammation, heparin-induced thrombocytopenia, protein-glycosaminoglycan interactions, glycosaminoglycans and malignancy, glycosaminoglycans and amyloidosis

Clinical studies

Deep venous thrombosis and pulmonary embolism, glycosaminoglycans, ischemic stroke, myocardial infarction, new indications, prolonged prophylaxis of venous thromboembolism, pentasaccharides, thrombin inhibitors, low-molecular weight heparins and cancer

Scientific board

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

Thursday, September 18th, 2008

14.30-14.40	J. Harenberg , Mannheim and B. Casu , Milan:Welcome address
Session I	EMERGING TRENDS AND ISSUES WITH GLYCOSAMINOGLYCANS Discussion leader: U. Lindahl , Uppsala
14.40-14.50	U. Lindahl – Introduction
14.50-15.10	U. Lindahl What else can "heparin" do?
15.10-15.30	M. Petitou , Paris New oligosaccharide-based antithrombotics with unprecedented pharmacological profile
15.30-15.50	R. Sasisekharan , Cambridge USA The tainted heparin story and the lessons to be learned
15.50-16.10	Discussion
16.10-16.20	U. Lindahl , Uppsala – Concluding remarks
16.20-16.40	Coffee and tea
Session II	SHAPES AND FUNCTIONS OF GAG SEQUENCES Discussion leader: R. Sasisekharan , Cambridge USA
16.40-16.50	R. Sasisekharan – Introduction
16.50-17.30	M. Guerrini , Milan / M. Hricovini , Bratislava Roles of natural and chemically-induced flexibility on protein binding properties of heparin sequences
17.30-17.50	E.A. Yates , Liverpool: Selective detection of secondary structural changes in protein-glycosaminoglycan complexes
17.50-18.10	Discussion
18.10-18.20	R. Sasisekharan - Concluding remarks

Friday, September 19th, 2008

Session III	NONANTICOAGULANT ACTIVITIES OF GLYCOSAMINOGLYCANS Moderators: M. Wehling , Mannheim and J. Turnbull , Liverpool
8.30-8.50	J. Turnbull , Liverpool Action of modified heparins in a transgenic mouse model of Alzheimers disease
8.50-9.10	G. Bendas , Bonn Is VLA-4 a target for antimetastatic heparin activity in melanoma?
9.30-9.50	A. Stemberger , Munich: Strategies for local anticoagulation of vascular prosthesis - results from in vitro studies and animal experiments.
9.50-10.10	J. Gallagher , Manchester: The regulation of growth factors by heparan sulfate
10.10-10.30	Discussion
10.30-10.50	Coffee, tea
	Moderators: J. Gallagher , Manchester, and B. Brenner , Haifa
10.50-11.10	C. Freeman , Camberra Involvement of HS and heparanase in pathophysiology of diabetes
11.10-11.30	J.-p. Li , Uppsala: Heparan sulfate and heparanase: roles in inflammatory responses
11.30-11.50	C. Pisano , Rome Anticancer activity of a heparin derivative
11.50-12.10	I. Vlodaysky , Haifa Involvement of heparanase in chronic colitis and colon cancer
12.10-12.30	Discussion

Friday, September 19th, 2008

Session IV

HEPARINS AND LMWHs: IN DEPTH CHARACTERIZATION

Moderators: **S. Alban**, Regensburg and **F. Ofosu**, Toronto

14.30-14.45

H. Szelke, R. Krämer, Heidelberg:

A fluorescent assay for the rapid and direct detection of heparins

14.45-15.00

L. de Ferra, Frosinone / **A. Bisio**, Milan:

Analytical profiling of tetrasaccharide fractions of LMWHs

15.00-15.15

G. Torri, Milan

Structural characterization of size-homogeneous LMWH fractions with different affinities for antithrombin

15.15-15.30

G. Venkataraman, Cambridge USA

Mechanistic studies on rational engineered LMWH

15.30-15.45

Discussion

15.45-16.15

Coffee, tea

Session V

BEYOND HEPARIN?

Moderators: **G. Torri**, Milan, **R. Krämer**, Heidelberg

16.15-16.35

F. Markwardt, Erfurt:

Historical development of anticoagulants

16.35-16.55

V. Laux, Wuppertal:

AT-III independent inhibitors of coagulation proteins - the end of the heparin and LMWH era?

16.55-17.15

K. Preissner, Giessen:

Functional relevance of extracellular RNA-protein interactions for vascular homeostasis

17.15-17.35

G. Nowak, Jena:

Is heparin-induced thrombocytopenia type II (HIT II) an autoimmune disease?

17.35-17.55

E. Vismara, Milan / **L. Borsig**, Zurich:

Structure and antimetastatic activity of C-C mimics of maltohexaose sulfate

17.55-18.15

Discussion

Saturday, September 20th, 2008

Session VI	“HEPARINOIDS” AS HEPARIN CONTAMINANTS EFFECTS OTHER THAN ANTICOAGULATION Moderators: S. Sasisekharan , Boston, and G. Torri , Milan
9.00-9.15	G. Mascellani , Modena Dermatan sulfate as a minor component of heparins
9.15-9.30	E. Gray , Potters Bar, UK The influence of contaminants and impurities on the anticoagulant profiles of unfractionated and LMW heparins.
9.30-9.45	S. Alban , Regensburg: "Quality control of heparins - Are the current "units" and assays still adequate?"
9.45-10.00	B. Mulloy , Potters Bar, UK – New analytical methods for the characterisation of unfractionated heparins to detect contaminants
10.00-10.15	Discussion
10.30-10.45	Coffee break
SESSION VII	WORKSHOP ON THE DEVELOPMENT OF GENERIC LMWH PREPARATIONS Moderators: J. Harenberg , Mannheim, B. Casu , Milan
10.45-11.00	F. Ofosu , Toronto: The obstacles facing the concept of generic LMWHs
11.00-11.15	J. Harenberg , Mannheim Proposal of the working party on generic LMWHs of the SSC on Anticoagulation of the ISTH
11.15-12.15	All: Discussion of a prepared paper of the <i>ad hoc</i> working party on generic LMWHs
12.15	B. Casu/ J. Harenberg: Closing remarks

General Information

Thursday, September 18th, 2008

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

Friday, September 19th, 2008

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

Saturday, September 20th, 2008

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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