12th Symposium on Glycosaminoglycans

September 23th-25th, 2004

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 2004

As for the past eleven editions, the 12th Glycosaminoglycan Symposium will be hosted in Villa Vigoni (Loveno, Lake Como). Started as Italian-German meetings (the villa is a property of 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 sixty participants.

Topics selected for discussions this year include the sequence-dependence of biological activity of glycosaminoglycans; differentiation of low-molecular weight heparins; heparanase inhibitors as potential antiangiogenic and antimetastatic drugs; clinical assessment of heparins and non-GAG antithrombotic agents, and (in a minisymposium devoted to new therapeutic targets) GAGs in Alzheimer disease. 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.

The 12th Glycosaminoglycan Symposium will start in the early afternoon of Thursday, September 23 and end the early afternoon of Saturday, September 25. Accommodation for most of the participants will be arranged in Villa Vigoni and in its surroundings. Accommodation can be arranged also in hotels in Menaggio. Meals will be served in the villa.

Invited participants will receive further information in due course.

Job Harenberg
j-harenberg@t-online.de

Benito Casu
casu@ronzoni.it

Main topics

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

Characterization of Glycosaminoglycans
Anticoagulant assays, nuclear magnetic resonance, new biological assays, standardization and harmonization of methods

Structure-function relationship
Drug interactions of anticoagulants, glycosaminoglycans and platelet factor 4, glycosaminoglycans and growth factors, glycosaminoglycans and inflammation, heparin-induced thrombocytopenia, protein-glycosaminoglycan interactions, glycosaminoglycans and Alzheimer's disease

Polysaccharides and biomaterials
Coating of stents, coating of biological materials

Clinical studies
Deep venous thrombosis and pulmonary embolism, glycosaminoglycans, ischemic stroke, myocardial infarction, new indications, prolonged prophylaxis of venous thromboembolism, pentasaccharides, thrombin inhibitors

Scientific board

Breddin HK, Casu B, Harenberg J, Palumbo M, Cornelli U.

Sponsors:

Aventis Glycochemistry, Vitry Sur Seine, France
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Sanofi-Synthelabo, Germany
Sigma-Tau, Pomezia, Italy

Thursday, September 23rd, 2004

14.30-14.40	**Harenberg J, Mannheim and Casu B, Milan** Welcome address

Session I	**Heparanase - Biology and Pharmacology** **Moderators: Lindahl U, Uppsala, Vlodavsky I, Jerusalem**
14.40-15.00	**Steinkühler C, Pomezia** Investigating structure and function of human heparanase by protein engineering
15.00-15.20	**J.-p. L, Uppsala:** Minimal heparin/heparansulfate sequences cleaved by heparanase
15.20-15.40	**Vlodavsky I, Jerusalem** Biological activities of heparanase
15.40-16.00	**Coffee and tea**
16.00-16.20	**L. Borsig, Zürich** Mechanisms for antimetastatic activity of polysulfates
16.20-16.40	**Casu B, Milan** Strategies for developing heparan sulfate mimics as heparanase inhibitors
16.40-17.10	**Discussion**
17.10-17.30	**Wenzel Thea, Vienna** *Sculpia Vienne Austriae MDCCXXXVII Lorenzo Matielli F – Lorenzo Matielli in Loveno and Vienna, the villa of the Mylius family in Loveno*

Friday, September 24th, 2004

Session II	**Novel biological implications of glycosaminoglycans** **Moderators:** **Petitou M, Toulouse** and **Salmivirta, M, Turku**
9.00-9.20	**Lindahl U, Uppsala** Structure of heparan sulfate – how regulated does it need to be?
9.20-9.40	**Gallagher J, Manchester** Heparin motifs for the assembly of growth factor signalling complexes
9.40-10.10	**Baici A, Zürich** Paradoxical effects in glycosaminoglycan-protein interactions
10.10-10.30	**Nowak G, Jena** Molecular weight extended direct antithrombotic drugs with anticancer activity
10.30-10.50	**Coffee, tea**
10.50-11. 10	**Sasisekharan R, Boston** Promoters of cellular uptake of heparin and cancer cell death
11.10-11.30	**Yates EA, Liverpool** Engineered heparins: a strategy for optimizing biological activities of heparin
11.30-11.50	**Venkataraman G, Boston** *To be defined*
11.50-12.15	**Discussion**

Session III	**Advances in low- and very low-molecular weight heparins**
	Moderators: Fareed J, Maywood, and Nowak G, Jena
14.00-14.20	**Viskov C, Vitry sur Seine** Process-dependent generation of heparin oligosaccharides with different location of antithrombin-binding sequences
14.20-14.40	**Laux V, Frankfurt** Octaparin, a new well-characterised ultra low-molecular-weight heparin
14.40-15.00	**Bianchini, P, Modena** Coagulation and osteoporosis. Deligoparin inhibits arterial calcification in “Villaverde” rats
15.00-15.15	**Guerrini M, Milano** Structural characterization of low-molecular-weight heparins by two-dimensional NMR spectroscopy
15.15-15.35	**Alban S, Kiel** From the production to the clinics – differences between LMWHs
15.35-15.50	**Bisio A, Milan** Characterization of ultra-low-molecular weight heparins obtained by physical methods
15.50-16.00	**Discussion**
16.00-16.15	**Coffee, tea**

Session IV	**Clinical assessment of glycosaminoglycans. Comparison with other antithrombotics**
	Moderators: Palumbo M, Padova, Kirchmaier C, Wiesbaden
16.15-16.30	**Harenberg J, Mannheim** Anticoagulant effects by inhalation of low-molecular-weight heparin certoparin by new therapeutic targets
16.30-16.45	**Sasisekharan R, Boston** Novel results on differential adsorption of heparin oligosaccharide administered by non-invasive (nasal) route
16.45-17.00	**Markwardt F, Erfurt** Historical perspectives in the development of thrombin inhibitors as antithrombotic drugs
17.00-17.15	**Stemberger A, Munich** Antithrombotic and anti-infective coating of biomaterials: both reduce thrombogenicity
17.15-17.30	**Fenyvesi T, Mannheim** Inhibition of thrombin generation and platelet aggregation by factor Xa and factor IIa inhibitors
17.30-17.45	**Calatzis A, Munich** Monitoring of Heparins, Heparinoids and direct inhibitors: How can we cope with standardization and calibrations issues in clinical practice?
17.45-18.00	Discussion

Saturday, September 25th, 2004

Session V	**Minisymposium** (organized by U. Cornelli): **New therapeutic targets:** **Glycosaminoglycans and Alzheimer's disease**
	Moderator: Cornelli U, Milano
9.00-9.20	**Lindahl U, Uppsala** Heparan sulfate and amyloid disease
9.20-9.40	**Turnbull JE, Liverpool** Heparin turns down the BACE: novel heparan sulfate-protein interactions in Alzheimer's disease
9.40-10.00	**Bergamaschini L, Milan** Peripheral treatment with a low-molecular-weight heparin reduces plaques and beta-amyloid accumulation in a mouse model of Alzheimer's disease
10.00-10.20	**Coffee, tea**
10.20-10.40	**Fareed J, Maywood** Differential action of heparin-derived oligosaccharides and LMWHs and relationships with Alzheimer disease
10.40-11.00	**Lee J, Maywood** Molecular-weight dependence in the prevention of amyloid toxicity in brain by LMWHs
11.00-11.20	**Hanin I, Maywood** Activity of different glycosaminoglycans in the protection of cholinotoxin AF64A injected into the brain
11.20-11.40	**Discussion**
11.40-12.00	**Casu B, Milan/Harenberg J, Mannheim** Closing remarks

General Information

Social Program

Thursday, September 23, 2004

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

Friday, September 24, 2004

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

Saturday, September 25, 2004

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

Location of the Symposium:
"Villa Vigoni e.V."
Via Giulio Vigoni 1
Loveno di Menaggio
I-22017 Menaggio (Como)
Tel.: +39-0344/361 11
Fax: +39-0344/36 12 10
E-mail: segreteria.vv@villavigoni.it
Internet: http://www.villavigoni.it

Registration: Thursday, September 23, 2004

Organisers:
Prof. Dr. B. Casu
Istituto di Ricerche Chimiche e Biochimiche
"G. Ronzoni"
Via G. Colombo, 81
I-20133 Milano
Tel: +39/02 70 641 623
Fax: +39/02-70 641 634 E-mail: casu@ronzoni.it

Prof. Dr. J. Harenberg
IV. Dept. of Medicine
University Hospital Mannheim
Theodor-Kutzer-Ufer
D-68167 Mannheim
Germany
Tel: +49/621-383 3378
Fax: +49/621-383 3808 E-mail: J-Harenberg@t-online.de