

**LOYOLA
MEDICINE**



Loyola University Chicago
Stritch School of Medicine

Loyola University Chicago
Stritch School of Medicine
Division of Continuing Medical Education
2160 S. First Avenue, Bldg. 120, Room 310
Maywood, IL 60153

HEPARIN CENTENNIAL SYMPOSIUM

**Scientific and Clinical Developments and their
Impact on the Understanding of the Pathogenesis of
Thrombosis and Its Management**



Friday, October 28, 2016

Sponsored by:
Loyola University Chicago
Stritch School of Medicine
Department of Pathology and the
Division of Continuing Medical Education
In collaboration with The International Union of Angiology
And The North American Thrombosis Forum



STRITCH
SCHOOL of MEDICINE



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Faculty Disclosure
Loyola University Chicago Stritch School of
Medicine ensures balance, independence,
objectivity, and scientific rigor in all
educational activities for which CME credit
is awarded. Complete disclosure information
will be provided to the audience in the printed
activity material.

PROGRAM DESCRIPTION

This international symposium is organized to update the current knowledge on the clinical and fundamental research developments in the area of heparin and related drugs. This program will focus on the structure, biology, and clinical aspects of heparins including low molecular weight heparins and ultra-low molecular weight heparins. The recent developments in synthetic and bio-engineered heparins will also be updated. The clinical indications for these drugs will be reviewed by leading experts. The program is integrated to include basic scientists, clinicians, regulatory spokesmen, and allied health personnel. The program will also provide an opportunity for open discussions and networking among various groups.

COMPETENCIES

This educational event will address the following competencies: medical knowledge; practice-based learning and improvement; interpersonal and communication skills; interdisciplinary team skills; professionalism; system-based practices and quality improvement.

TARGET AUDIENCE

This program is designed for individuals interested in the fundamental research and clinical use of heparins: allied health personnel, pharmacists, nurses, physicians and surgeons, pharmaceutical industry personnel, and post-graduate students.

CURRICULAR GOALS AND OBJECTIVES

Updated knowledge on the recent developments in anticoagulant drugs with a focus on heparin.

Upon completion of this activity, participants should be able to:

- Understand the stepwise development of heparins, the scientific rationale behind their clinical use, and its sustainability;
- Understand the pharmacology and clinical applications of heparins;
- Appreciate the newer developments in the areas related to heparin;
- Appreciate the impact of current advancements on the development of newer heparin related drugs.

Provide an interactive platform to discuss the optimal use of heparin-like drugs among various professionals.

Upon completion of this activity, participants should be able to:

- Indicate the ongoing issues related to heparin usage;
- Identify how heparin and related drugs can be resourced from other sources than porcine tissues;
- Summarize the regulatory requirements for the approval of heparins to assure their safety and efficacy.

Project future usage of heparins in newer clinical indications.

Upon completion of this activity, participants should be able to:

- Know that unfractionated heparin is the only drug for surgical indications with an antagonist;
- Recognize that heparin resourcing from bovine and ovine sources will provide alternate approaches to meet supply and demand;
- Appreciate that besides its anti-coagulant usage, heparins have other important applications in cancer, auto-immune diseases, and other indications;
- Develop newer drugs based on heparin's structure and functionality.

ACCREDITATION

The Loyola University Chicago, Stritch School of Medicine is

accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The Loyola University Chicago, Stritch School of Medicine designates this live educational activity for a maximum of **7 AMA PRA Category 1 Credit(s)**[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Nurses and other health professionals will receive a Certificate of Attendance. For information on applicability and acceptance, please consult your professional licensing board.

Loyola University of Chicago is an Equal Opportunity Educator and Employer.

CONFERENCE LOCATION

Loyola University Chicago
Center for Translational Research and Education
2160 S. First Ave., Maywood, IL 60153

SPECIAL NEEDS

We welcome all registrants to this activity. If you need special accommodations in order to participate, we will try to provide for your needs. Please submit a written request one month prior to the course to receive service.

ADDITIONAL INFORMATION

Contact the Division of CME during business hours. Phone (708) 216-3236 or (800) 424-4850 or Fax (708) 216-5318. For other CME offerings, please visit our web site at <http://ssom.luc.edu/cme>

For local area hotel listings, visit

http://ssom.luc.edu/media/stritchschoolofmedicine/continuingmedicaleducation/documents/Local_Accommodations.pdf

REGISTRATION

HEPARIN CENTENNIAL SYMPOSIUM

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Friday, October 28, 2016

Seating is limited and pre-registration is required for the course. Your prompt and accurate response is requested no later than **Friday, October 14th** to secure your reservation and availability of course material for this symposium.

There is no fee for this program.

Register online at <http://ssom.luc.edu/cme> and click on events.

To register via email, send complete registration information to kbertuc@luc.edu
You may also phone (708) 216-3236 or fax registration to (708) 216-5318

Mail completed registration form to:

Loyola University Chicago Stritch School of Medicine
Office of Continuing Medical Education
2160 S. First Ave., Bldg. 120, Room 310
Maywood, IL 60153

Please print clearly

Name _____

Degree _____
(MD, DO, PhD, etc.)

Hospital, School, or Other Affiliation _____

Specialty _____

Address _____

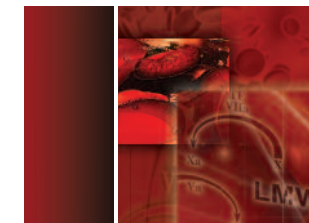
City _____ State _____ Zip _____ Country _____

Daytime Phone Number _____ Fax _____

E-mail _____
(Your confirmation packet will be e-mailed to this address. Please adjust your settings so you receive e-mails from the luc.edu domain.)

What do you plan to gain from attending this activity? _____

Identify presentation specifics that will address your needs: _____



SESSION I - Chairpersons: Karel Roztocil, MD, PhD
Jawed Fareed, PhD, FAHA

7:30 am Registration

8:30 am Welcome and Opening Remarks
Pieter de Tombe, PhD

8:40 am The Discovery of Heparin as a Landmark
for the Foundation of Surgical
Anticoagulation: A Cardiovascular
Surgeon's Perspective
Victor Ferraris, MD, PhD

9:00 am A Step-wise Evolution of Heparins and
Synthetic Pentasaccharide
Pierre Willaime, MBA

9:40 am 100 Years After the Discovery of Heparin:
Lessons Learned
Jawed Fareed, PhD, FAHA

10:00 am BREAK

SESSION II - Chairpersons: Helena Nader, PhD
Shaker Mousa, PhD

10:30 am Structural Analysis of Heparins and
Bioengineered Heparins
Robert Linhardt, PhD

10:50 am Analysis of Heparins Using Integrated
Approaches
Bernd Diehl, PhD

11:10 am Validation of Sole Anit-Xa Oligosaccharides
as Antithrombotic Agents
Jeanine Walenga, PhD

11:30 am The Discovery of Pentasaccharides and
their Impact on the Development of
Newer Therapeutic Agents
Maurice Petitou, PhD

11:50 am The Heparin Contaminants:
Lessons Learned
Marco Guerrini, PhD

12:10 pm The Ronzoni Institute. Impact on Heparin
and GAG Sciences
Giangiacomo Torri, PhD

12:30 pm LUNCH

SESSION III - Chairpersons: Job Harenberg, MD, PhD
Alexander G.G. Turpie, MD

1:30 pm VTE Treatment with Heparins and Other
Glycosaminoglycans
Russell Hull, MD, PhD

1:50 pm Endothelial Modulators of Heparin:
Lessons from Clinical Trials
Debra Hoppensteadt, PhD

2:10 pm Glycosaminoglycans and Beyond
Job Harenberg, MD, PhD

2:30 pm VTE Prevention with Heparin and Other
GAGs in Major Orthopaedic Surgery
Alexander G.G. Turpie, MD

2:50 pm Current Consensus on DVT Management:
An Update
Eduardo Ramacciotti, MD, PhD

3:10 pm BREAK

SESSION IV - Chairpersons: Ali Al-Hakim, PhD
Umberto Cornelli, MD, PhD

3:40 pm Understanding the Structure-Activity of
Heparan Sulfate Using a Synthetic Approach
Jian Liu, PhD

4:00 pm Heparins of Different Origins:
Where Do We Stand?
Helena Nader, PhD

4:20 pm Sheep Heparins as Biosimilar Equivalent
of Porcine Heparins
Yiming Yao, PhD and Fabian Magalhaes, PhD

4:40 pm Sulodexide in Vascular Medicine
Giuseppe Maria Andreozzi, MD

5:00 pm Regulatory Position on the Development
of Bovine Heparins
Ali Al-Hakim, PhD

5:20 pm Invited Discussion
Anna Maria Naggi, PhD

5:30 pm Adjournment

AGENDA