

# Targeting Replication and Integration of HIV

## Fourth General Assembly and Open Symposium

In collaboration with  
the Belgian Society of Biochemistry and Molecular Biology

June 11-12, 2007

Convent van Chièvres

Groot Begijnhof - Benedenstraat 39 – Leuven

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**TRIOH**

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**Belgian Society of Biochemistry and Molecular Biology**

Prof Dr Yves Engelborghs: [yves.engelborghs@fys.kuleuven.be](mailto:yves.engelborghs@fys.kuleuven.be)

## Welcome

Dear attendees,

The purpose of the TRIOH Consortium is to integrate different research efforts from European partners on novel anti-HIV molecules targeting viral replication and integration. Our central scientific paradigm is the molecular continuum between the different HIV early replication steps starting with viral entry and leading to integration. Our two days Open Symposium will cover topics of current interest and concern ranging from the design and synthesis of new and promising anti-HIV drugs to the validation of new targets and cofactors for anti-HIV drug design. The meeting provides an interdisciplinary view of contemporary antiviral drug research which should be of interest to chemists, biologists, and clinicians.

For the organization of this congress we would like to thank the Belgian Society of Biochemistry and Molecular Biology for their financial and practical support.

We thank you for attending our Open Symposium and hope you will enjoy this experience.

Myriam Witvrouw, Coordinator

## Program

All lectures will take place in the Willem Van Croy Room  
in the Convent van Chièvres

*Monday, June 11, 2007*

8.15-9.00	<b>COFFEE AND SNACK, Cousture Room</b>
9.00-9.15	<b>Opening</b>
	<b>Marc Vervenne</b>
	Rector Katholieke Universiteit Leuven, Belgium
9.15-9.45	<b>The TRIOH project and major achievements with focus on HIV integrase</b>
	<b>Myriam Witvrouw, TRIOH Coordinator</b>
	Laboratory for Molecular Virology and Drug Discovery, K U Leuven, Belgium
9.45-10.45	<b>Host genetic factors in HIV infection in Africa</b>
	<b>Thumbi Ndung'u</b>
	University of Kwazulu Natal, South Africa
10.45-11.15	<b>COFFEE, Cousture Room</b>
11.15-11.45	<b>HIV entry and virus coreceptor switch</b>
	<b>Jose A Esté</b>
	Hospital Germans Trias i Pujol, Badalona, Spain
11.45-12.15	<b>Progress towards an HIV-susceptible transgenic rat model - challenges and promises</b>
	<b>Oliver T Keppler</b>
	University of Heidelberg, Heidelberg, Germany
12.15-12.45	<b>Towards the development of new anti-HIV drugs targeting the viral proteins NC</b>
	<b>Jean-Luc Darlix</b>
	LaboRetro, Dept. of Human Virology, ENS de Lyon, France
12.45-14.30	<b>LUNCH, Faculty Club - Infirmerie</b>

14.30-15.00	<b>Chaperoning and zinc binding properties of NCp7: mechanisms and targeting</b>
	<b>Yves Mely</b>
	Université Louis Pasteur, Strasbourg, France
15.00-15.30	<b>Summary of the main results concerning polymerase and/or RNase inhibitors</b>
	<b>Jaume Vilarrasa &amp; Giovanni Maga</b>
	University of Barcelona, Spain and Istituto di Genetica Molecolare, Pavia, Italy
15.30-16.00	<b>Small Molecule Inhibitors Targeting HIV-1 Reverse Transcriptase Dimerization</b>
	<b>Tobias Restle</b>
	Universitätsklinikum Schleswig-Holstein, Campus Lübeck, Germany
16.00-16.30	<b>COFFEE, Cousture Room</b>
16.30-17.00	<b>Adapting the HIV-1 integrase to NMR: unite and conquer? NMR studies of the HIV-1 integrase</b>
	<b>Rob N. de Jong and Rob Kaptein</b>
	Utrecht University, Bijvoet Center for Biomolecular Research, the Netherlands
17.00-17.30	<b>Investigation of the HIV-1 integrase interactor LEDGF/p75 with fluorescence cross-correlation spectroscopy</b>
	<b>Yves Engelborghs</b>
	Department of Chemistry, Laboratory of Biomolecular Dynamics, K U Leuven, Belgium
20.00	<b>Invited Dinner for TRIOH participants and invited speakers</b>

*Tuesday, June 12, 2007*

9.00-9.50	<b>Acyclic nucleoside phosphonates as antiviral agents</b>
	<b>Erik De Clercq</b>
	Rega Institute, K U Leuven
9.50-10.40	<b>15 years of NNRTI research: how scientists resist the viral escape</b>
	<b>Piet Wigerinck</b>
	Tibotec, Mechelen, Belgium

10.40-11.10	<b>COFFEE, Cousture Room</b>
11.10-12.00	<b>Discovery of novel HIV-1 Integrase Inhibitors: a multidisciplinary approach</b>
	<b>Letizia Barreca</b>
	Università degli Studi di Messina, Messina, Italy
12.00-12.50	<b>TRIM5 and HIV-1 Restriction</b>
	<b>Jeremy Luban</b>
	Institute for Research in Biomedicine, Bellinzona
12.50-14.00	<b>LUNCH, Faculty Club - Infirmierie</b>
14.00-15.30	<b>Poster Session, M.M. van Hamaele room</b>
15.30-16.20	<b>Interaction of HIV-1 with cellular chromatin: a molecular and optical study</b>
	<b>Anna Cereseto</b>
	Scuola Normale Superiore, Pisa, Italy
16.20-17.10	<b>LEDGF/p75 is a novel cofactor of HIV and a novel target for antiretroviral therapy</b>
	<b>Zeger Debyser</b>
	Laboratory for Molecular Virology and Gene Therapy, K U Leuven, Belgium
17.10-17.30	<b>Closing remarks - TRIoH Training Awards</b>
	<b>Myriam Witvrouw</b> , TRIoH Coordinator
	Laboratory for Molecular Virology and Drug Discovery, K U Leuven, Belgium
17.30	<b>FAREWELL DRINK, Cousture Room</b>

## TRIoH: A Short Overview of the Project

### **The consortium.**

The general objective of the project 'Targeting Replication and Integration of HIV (TRIoH)' is to integrate the research efforts from different European partners on novel anti-HIV targets and drugs. Drug discovery includes all aspects of present day drug discovery: target identification and validation, modelling and chemical synthesis, drug evaluation in enzymatic and cell culture assays, mechanism of action studies, antiviral resistance development and analysis, toxicological and pharmacological evaluation in cell culture and animal models. Our consortium is composed of 27 partners, including 3 Biotech SMEs coming from 12 different European countries (Belgium, France, Germany, Italy, The Netherlands, Spain, Sweden, UK, Switzerland, Yugoslavia, Hungary and Russia).

### **The science.**

Highlights of the TRIoH consortium results are at present: An optimized multi-parametric assay for entry/fusion was instrumental in identifying new compounds against virus attachment, interaction with CD4, HIV co-receptors, gp41-dependent fusion and/or HIV-envelope induced cell-death. Compounds have been identified with potent anti-HIV activity targeting macrophage-tropic HIV replication and HIV co-receptors. Libraries of compounds were screened in a new nucleocapsid assay and several hits with in vitro activity have been identified. We identified a novel strand transfer integrase inhibitor with excellent preclinical in vitro characteristics. We validated LEDGF/p75 as an essential co-factor of HIV integration and a specific drug discovery program targeting this new target was initiated. New assays against new targets (entry/fusion, RNase H, integrase, cellular co-factors, etc.) have been developed and are now used for the evaluation of small molecules.

### **TRIoH Training Program in collaboration with developing countries and dissemination.**

We established a TRIoH training program open to the entire European research community. Within TRIoH a program to support African AIDS researchers has been established as well. These programs assure dissemination of research results to scientists and end users. This congress is one of the final events of the project and highlights the project and current HIV-drug discovery.



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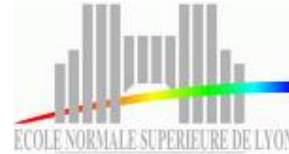
website: <http://www.kuleuven.ac.be/molvirgen/projects/trioh/>

TRIOH is a project in collaboration with following institutions:

Universities



École Normale Supérieure de Lyon



Università degli Studi di Messina



Lomonosov Moscow State University



Universiteit Utrecht

Ruprecht-Karls Universität Heidelberg

University of Szeged

Università di Siena



École Normale Supérieure de Cachan

Universitätsklinikum Schleswig-Holstein Campus Lübeck





### Research Institutes



Centre Nationale de la Recherche Scientifique



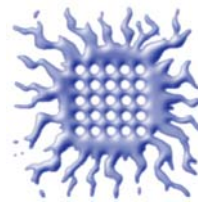
Institut national de la santé et de la reserche médicale



Istituto di Genetica Molecolare - Consiglio Nazionale delle Ricerche



Institute for Nuclear Sciences 'Vinca'



### SME's

