CHAARM
Combined Highly Active Anti-Retroviral Microbicides

Newsletter
Issue number 1 - 2011

http://chaarm.eu

# Editorial


Prof. Charles Kelly


Prof. Robin Shattock

Welcome to the first annual CHAARM newsletter which we hope will give an insight into the work of the CHAARM consortium. The first year of the CHAARM project has coincided with very significant developments elsewhere in the microbicides field. In July 2010, for the first time, successful results were reported (XVIII AIDS Conference and published in the journal Science) from a clinical trial of a vaginally applied microbicide. The trial (CAPRISA 004) carried out in South Africa demonstrated that vaginally applied tenofovir gel reduced HIV infections by 39% compared with a placebo gel. In November, the results of the iPrEx trial (published in the New England Journal of Medicine) demonstrated that a combination pill of tenofovir and emtricitabine taken orally reduced infections by approximately 44% compared with a placebo pill.

The CHAARM consortium recognizes the importance of these studies and a key part of the research programme is to develop combinations of microbicides to investigate whether they could be more effective. Formulation studies aimed at producing clinical grade combination microbicides for safety studies in humans are well advanced. In pre-clinical studies, new combinations of microbicides are being tested and new compounds are being developed. The importance of rigorous testing of efficacy and safety of microbicides is emphasized by the CHAARM scientists who feature in this newsletter.

Active collaboration between scientists in the CHAARM consortium is essential to the progress of the research programme and after the first 12 months it is clear that this is happening and that as a result, several project objectives have been achieved ahead of schedule. We look forward to the first annual consortium meeting after a year of good progress and anticipate that next year will be even more productive and eventful.

Our colleagues from Minerva are to be congratulated for producing this excellent newsletter and also for their efforts throughout the year to disseminate information about the CHAARM project to a wider audience. The flyers, articles and press releases that they have produced and the very effective project website that they have established have all served to raise the profile of this project.

Prof. Charles Kelly, King's College London, UK
Prof. Robin Shattock, St George University, London, UK
Coordinators of CHAARM project

# The project

The partners of CHAARM during the Kick-off meeting in Rome, Italy, in 2010

**The Combined Highly Active Anti-retroviral Microbicide (CHAARM)** project has been awarded funding by the European Commission (DG research) within the context of the Seventh Framework Programme for technology research and development.

The main objective for the CHAARM project is to develop highly active specific, targeted combinations of microbicides that can be applied at both rectal and vaginal mucosal surfaces to prevent HIV-1 transmission. This project will focus on the discovery and development of small molecule inhibitors of HIV-1 for use as microbicides, as well as determining the microbicide potential of combinations of established anti-retroviral agents.

The rationale for investigating combinations is both to increase the barrier to the development of resistance and to increase efficacy through additive or synergistic effects.

In addition to investigating novel combinations of established compounds, the CHAARM project proposes to develop new microbicides aimed at established and new targets to maintain the pipeline of promising highly targeted compounds. In parallel, studies of mucosal biomarkers will be performed to determine parameters associated with health and provide a basis for assessments of changes likely to be associated with mucosal damage. The project also aims to provide training to young scientists, to engage with stakeholders and to disseminate research findings and achievements not only to scientists but also to a wider audience.

In summary, CHAARM is a large-scale collaborative project which is expected to contribute significantly to the development of single or combined microbicide products for prevention of HIV-1 infection at rectal or vaginal mucosae.

In order to achieve the project objectives, the consortium includes partners not only from universities and research institutes but also industrial partners with experience of producing anti-retroviral drugs and a major microbicide developer. Moreover, partners from universities/research institutes have extensive experience of product development and will provide compounds for investigation of their microbicide potential.

The CHAARM consortium also proposes to interact with other programmes funded by the European Union namely, the Europrise network and the Thinc Consortium (a project aimed at identifying novel targets for anti-retroviral drugs amongst cellular proteins required as cofactors for HIV-1 nuclear import and integration).

CHAARM project is an initiative funded by the European Commission, FP7, with a budget of €12 million. The project was launched on January 2010 and runs until December 2014 . The consortium is composed of 31 partners.

The CHAARM consortium is composed by:

- King's College London, UK
- St George's University of London, UK
- Commissariat à l'Energie Atomique, France
- Institute of Tropical Medicine Antwerp, Belgium
- University of Antwerp, Belgium
- Queens University Belfast, Ireland
- Biozentrum of the University, Basel Switzerland
- Universita di Siena, Italy
- Katholieke Univ. Leuven, Belgium
- University College London, UK
- Fondazione San Raffaele del Monte Tabor, Italy
- University of York, UK
- University of Utrecht, The Netherlands
- Instituto de Salud Carlos III, Spain
- Centre of Cooperative Research in Bio-materials, Spain
- Council for Scientific and Industrial Research, South Africa
- Universita degli Studi di Roma "La Sapienza", Italy
- Spoluka Chemical Comp. Ltd. Ukraine
- Minerva Consulting & Communication, Belgium
- Academic Medical Centre, Centre for Poverty-related Communicable Diseases, The Netherlands
- Polymun Scientific Immunbiologische Forschung GmbH, Austria
- Gilead Sciences, USA
- Particle Sciences, USA
- University of Geneva, Switzerland
- International Partnership for Microbicides, USA
- Karolinska Institutet, Sweden
- European AIDS Treatment Group, Belgium
- Mintaka Foundation for Medical Research, Switzerland
- Tibotec Virco Virology, Belgium
- Microbiotec srl, Italy
- Middlesex University Higher Education Corporation, UK

## Interview

by Minerva Consulting & Communication

# "Our main objective in Chaarm focuses on the evaluation of new drugs that can be used as microbicides"

*Interview to Dr. José Alcamí, Instituto de Salud Carlos III, Madrid, Spain*


*Researchers from the Instituto de Salud Carlos III, Madrid, Spain*

**What is the main focus of the work in Instituto de Salud Carlos III (ISCIII) for CHAARM and its main challenges?**
The AIDS immunopathogenesis Unit has a broad experience in the screening and characterization of the mechanism of action of new antivirals. To this aim we have built-up a platform for drug screening using recombinant viruses and generated the tools to assess the step of the virus cycle targeted by new drugs. Our main objective in CHAARM focuses on this task, the evaluation of new drugs that can be used as microbicides.

**Which is the background of the ISCIII in HIV research field?**
The ISCIII is a public research institution-with an important activity in the field of microbiology. The national Centre of Microbiology is in charge of the diagnosis of infectious diseases that require especial approaches and techniques. We are also responsible of the study and control of epidemic outbreaks. In the particular field of HIV the different groups of the institute work in the study of viral evolution, molecular epidemiology, resistance to antiretrovirals and mechanisms of immunological damage. Our group, in addition to work regarding the study of new antivirals develop specific research projects focusing on the study of viral entry and the molecular mechanisms controlling HIV latency and reactivation.

**Have the ISCIII participated in other European projects related to HIV researching field?**
Yes, we have previously participated in the EUROPRISE network from FP6. In this collaborative project we have developed an intense activity in the study of neutralizing antibodies. In particular we have generated new models based on recombinant viruses that allow a fast an accurate evaluation of neutralizing antibodies triggered by experimental HV vaccines.

> "We have built-up a platform for drug screening using recombinant viruses and generated the tools to assess the step of the virus cycle targeted by new drugs", says Dr. Alcamí

**In your opinion, how important could be the contribution of CHAARM project to HIV research and to the field of microbicides?**
Development of highly efficient microbicides remains a challenge for HIV research. The whole approach of CHAARM work packages include drug discovery, evaluation in In vitro systems, testing in animal models and further evaluation in humans. Therefore CHAARM represents, as far as I know, the main consortium that approaches in an integrate manner the research, development and evaluation on new molecules and delivery systems in microbicide research.

**Microbicides have been a long researched topic, from your point of view, what is new in this project?**
CHAARM does not restrict its activity to the study of drugs with already known activity, but we test new compounds searching for molecules with different structures and mechanism of action. This approach represents an important added value in the microbicide field that can result in discovery of new antiviral drugs. Also, the concept that local delivery of a combination of microbicides and vaccines can improve the efficiency of both products in a synergistic manner represents a challenging and attractive hypothesis that can be addressed by the CHAARM consortium.

**Now it's already 1 year after the launching of the project. How do you think your department has contributed in the advance of the research until now? Have you already achieved some important results?**
Actually we have done a lot of work! We have checked up to 250 compounds provided by three different groups of the consortium. These molecules target different steps in the viral cycle (entry, integration, reverse transcriptase). Some of these compounds represent new chemical structures and display interesting mechanisms of action including activity against resistant viruses. Also we have performed, together with other groups of the consortium, a common effort to develop and share In vitro systems that allow the study of interactions between two drugs in culture. This milestone will be important in future studies aiming at the definition of potent combination of antiretrovirals for microbicide use.

## Interview

by Minerva Consulting & Communication

# "Chaarm will certainly contribute to improve the efficacy of the microbicides in the context of broad cooperation among several European groups"

*Interview to Prof. Elisa Vicenzi, Fondazione Centro San Raffaele del Monte Tabor, Milan, Italy*

*Researchers from Fondazione Centro San Raffaele del Monte Tabor (HSR), Milan, Italy*

**What is the main focus of the work in Fondazione Centro San Raffaele del Monte Tabor (HSR) for CHAARM and its main challenges?**
To determine potential side-effects of anti-viral compounds in regard to induction of pro-inflammatory cytokines and chemokines.

**Which is the background of the HSR in HIV research field?**
We have worked in the fields of Virology and Immunology.

**Have the HSR participated in other European projects related to HIV researching field?**
Yes. HSR was represented in the prior microbicide EMPRO project. In addition, HSR coordinated the GISHEAL project aimed to the creation of the first database encompassing European and African LTNP Cohorts pooling the information already existing at national (France, Italy) and individual Centres in UK and Uganda. In the HIV vaccine area, HSR was represented in the AVIP project. Currently, HSR is coordinating the NGIN project aimed to develop a variety of 'next-generation' HIV-1 envelope-based immunogens that in combination with new adjuvant formulations are capable of eliciting high-titer broadly Nab responses. HSR is represented in the EUROPRISE, NEAT projects.

**In your opinion, how important could be the contribution of CHAARM project to HIV research and to the field of microbicides?**
Very important. Although the CAPRISA 004 study showed a 39% reduction in new HIV infections, we are still far from a full protection of HIV sexual transmission. There is a need to discover new antiretrovirals that inhibit HIV replication in the absence of toxic effects. In addition, the combination of 2 or more antiretroviral should be tested in order to improve the efficacy of the microbicides. CHAARM will certainly contribute to fulfill these objectives in the context of broad cooperation among several European groups.

**Microbicides have been a long researched topic, from your point of view, what is new in this project?**
To find new potent antiretrovirals that target early and late steps of the HIV life cycle.

"There is a need to discover new antiretrovirals that inhibit HIV replication in the absence of toxic effects", says Prof. Vicenzi

**Now it's already 1 year after the launching of the project. How do you think your research centre has contributed in the advance of the research until now? Have you already achieved some important results?**
My work is still preliminary, important results has not come yet.

## Interview

by Minerva Consulting & Communication

# "Thanks to the expertise of our department we can assess the efficiency and safety of new drugs in combination in human issue"

*Interview to Dr. Carolina Herrera, St. George's University of London, UK*

**What is the main focus of the work in St George's, University of London (SGUL) for CHAARM and its main challenges?**

The development of new candidate microbicides based on anti-retroviral (ARV) drug combinations as an efficient prevention strategy against sexual transmission of HIV is the main goal of CHAARM. Pre-clinical studies of these drugs and their combination, including anti-viral activity and safety, need to be conducted in the laboratory before being tested in humans.

One of the main challenges is to obtain relevant results in the laboratory, results that will be as close and informative as possible to the in vivo scenario when drugs will be tested in humans. With this objective in mind, Prof. Robin Shattock has developed in his laboratory at SGUL a model based on human tissue. Tissue resected from the female and male tissue or from the gastrointestinal tract is cut into little pieces, known as explants, which are then incubated with drugs, and infected with virus. Thanks to our expertise we can assess the efficiency and safety of new drugs in combination in human tissue. In addition to the safety, an important challenge in the field of prevention is to block the transmission of viruses resistant to ARVs used in therapy and/or microbicides. Our tissue explant model allows us to better characterize these viruses and to determine which combination of ARVs will prove efficacious against these mutants.

A limitation of our tissue model is the fact that we cannot completely reproduce in the laboratory the natural mucosal environment and in particular the nature of mucosal secretions.

> "In the field of microbicides, CHAARM has an essential and timely role to play after the positive results of CAPRISA 004, the first ARV-based microbicide phase II clinical trial, announced last summer in Vienna", says Dr. Herrera

Prof. Gary Coulton at SGUL will study this environment through a wide range of techniques to characterize the protein constituents of mucosal tissue secretions. The combined expertise within SGUL will provide an essential platform for the design of efficient microbicides that will be tested in clinical trials in humans.

**Which is the background of SGUL in HIV research field?**

Historically, SGUL received the first patient infected with HIV in London. This early involvement with the AIDS pandemic brought SGUL to build within its Centre for Infection and Immunity a strong team of scientists specialized in HIV.

Dr. Carolina Herrera in the laboratory

The expertise of Prof. Robin Shattock's laboratory in the field of microbicides has allowed us to become Centre of Reference for Microbicides with strong international links. In the field of HIV vaccine, the team of HIV scientist at SGUL received a Grand Challenge Award from The Bill and Melinda Gates Foundation and the Wellcome Trust, under the leadership of Prof. Shattock to develop new vaccine concepts. Innovation and expertise describe the research conducted at SGUL in the HIV field.

**Has SGUL participated in other European projects related to HIV researching field?**

Several groups in the Centre for Infection and Immunity at SGUL have been involved with other European initiatives both in the field of HIV microbicides and vaccine. Two of them are EMPRO, "predecessor" of CHAARM, and EUROPRISE. These projects have provided a strong scientific foundation for the research conducted within CHAARM and at the same time, have formed a new generation of young investigators with a European collaborative vision within the field of HIV.

**In your opinion, how important could be the contribution of CHAARM project to HIV research and to the field of microbicides?**

The field of HIV prevention in general, including vaccine, microbicides and oral pre-exposure prophylaxis, is going through an incredibly exciting time. During the last two years the first encouraging results have been obtained in clinical trials for all three prevention strategies. In the field of microbicides, CHAARM has an essential and timely role to play after the positive results of CAPRISA 004, the first ARV-based microbicide phase II clinical trial, announced last summer in Vienna. This clinical trial tested a single drug, Tenofovir, and 39% of protection was obtained. The idea of using combinations of ARVs to reach complete protection against sexual transmission, even of resistant viruses, is obvious and the results obtained by CHAARM will be essential for the development and success of this concept.

**Microbicides have been a long researched topic, from your point of view, what is new in this project?**

The concept of a microbicide as a prevention strategy against sexually transmitted HIV infection has been proposed for a number of years, however early failure of first generation of non-specific microbicides in clinical trials has refocused attention on the development


*St George's University of London, UK*

of more potent HIV specific ARV based candidates. The focus on ARV-based microbicides and combinations forms the central focus of the CHAARM program. Another aspect in the field of microbicides has been the disproportionate effort put in the development of vaginal microbicides compared to rectal microbicides despite receptive anal intercourse being linked to higher levels of HIV transmission for both men and women. For the first time, CHAARM devotes its time equally to the development of microbicides that will be efficacious and safe in both compartments: vaginal and rectal. Finally, the main focus of CHAARM on the design of effective microbicides using combinations of ARVs may provide an important new strategy to reduce transmission of HIV and resistant viruses that are becoming more prevalent in infected populations with high levels of treatment. Hence, CHAARM addresses the main issues and needs in the field of microbicides.

**Now it's already 1 year after the launching of the project. How do you think your department has contributed in the advance of the research until now? Have you already achieved some important results?**

The first year has allowed the different Teams involved in CHAARM to define a common and highly collaborative strategy to address the specific targets of CHAARM. At SGUL, specifically in Prof. Shattock's laboratory, where I am a post-doctoral fellow, we have conducted pre-clinical studies with our tissue explant model of several combinations including ARV drugs that block the virus with different mechanisms. The combinations chosen have also proven to be active against the first resistant viruses tested.

These studies are essential to inform the first clinical trial that will be conducted by CHAARM. During this year, we have also studied new ways to better predict the real efficiency of ARV-based combinations tested in our tissue model. The analysis of combinatorial experiments has still many limitations and with the Teams involved in CHAARM, we have decided to develop new analytical methods that will predict the in vivo efficacy of microbicides by establishing a translation between the results obtained in the laboratory and clinical trials conducted in humans.

by Minerva Consulting & Communication

# The relentless effort to curtail the HIV pandemic continues as researchers aggressively investigate alternative prevention tools

**A global, large-scale collaborative project involving world-renowned scientists is underway that seeks to cultivate combinations of highly active specifically targeted microbicides for vaginal and rectal application, known as CHAARM.**

The CHAARM project, which stands for Combined Highly Active Anti-retroviral Microbicides, aims to explore the microbicide potential of protease inhibitors and will test them in combination with inhibitors of HIV-1 reverse transcriptase, integrase or fusion inhibitors, using a number of highly developed drugs. The purpose of this is to develop new microbicides and research new targets that would focus on inhibition of HIV-1 at rectal and vaginal mucosae.

"The CHAARM project has a central core laboratory testing set up enabling testing and comparisons of large numbers of different compounds," says Dr Anna-Lena Spetz, Associate Professor at the Center for Infectious Medicine at Karolinska University Hospital in Stockholm, Sweden, a partner in the CHAARM project.

"Hence, the CHAARM project enables involvement of researchers that have discovered new compounds with anti-viral activity and their drugs will be tested in a pre-clinical setting for use as microbicides" added Dr. Anna-Lena Spetz

The CHAARM consortium includes over 30 partners from around the world, involving participation of public and private organizations, largely funded by the European Commission. Many of the participants have been involved in microbicide projects before, such as the European Microbicides Project (EMPRO), therefore giving them increased efficiency and adapting a systematic standardization of tools and techniques that can be used in CHAARM.

"It would be very difficult for each investigator to set up the efficacy and safety tests required to develop the drugs further," says Dr Spetz. First generation candidates such as nonoxoynol-9, Pro 2000 and Carraguard all failed to show effectiveness in reducing the transmission. As a result of these setbacks, there is increased pressure on finding new promising candidates from the second-generation microbicide products that can move forward in the efficacy trials.

**Funding difficulties**

In addition to the challenge of finding promising microbicide candidates, as is a common barrier for research institutions developing a "public health good", there is little economic self-interest for organizations to provide funding for microbicide research, placing microbicide research in a financially vulnerable position.

"These funding bodies do not have infinite resources," said Dr Oliver Hartley, biochemist and professor in the University of Geneva's faculty of medicine. "A potential concern is that attractive new microbicide products validated through the CHAARM program might experience significant delays in clinical development because the necessary funds to move further are not available."

As is the case with the CHAARM project and most other research projects in this sector, they largely rely on funding from the public sector, government grants and non-profits. This has created a challenge for developers to sustain sufficient financial commitment to research and development of microbicides. "Microbicides, like most public sector funded projects are always at a critical time point," says Mark Mitchnick, CEO Particle Sciences, Inc., a USA based pharmaceutical company. "Developing drugs is a hard business," adds Mitchnick, who served on the advisory board for EMPRO.

Particle Sciences is one of the private companies involved in CHAARM. With the lack of involvement from private companies and pharmaceutical companies in microbicide research, the responsibility of funding has fallen largely on public institutions, government organizations and non-profits. The CHAARM project received about 70% of their funding from the European Commission.

"Maintaining focus and the attention of funders is a real challenge since progress can, from the outside, seems slow – even when things are moving well in terms of drug development," says Mark Mitchnick

Drug development is rather complex and expensive; however, the potential profit for microbicides is promising once next generation products are successfully developed.

**A changing direction in microbicide research**

With the obstacles and discoveries made with the first generation microbicide trials and restricted funding, the researchers in CHAARM have a hopeful direction with this research project.

Professor Robin Shattock, a Professor of Cellular and Molecular Infection in the Department of Cellular and Molecular Medicine at St George's University of London, UK, says the virus will be targeted more specifically with more emphasis being placed on blocking the infection of target cells.

The discoveries have led the field to move microbicides from being strictly at the time of exposure product, to be more prior to exposure and sustained delivery. "It has also led to the field having to prioritize new formulations that maximize adherence to give the best possible chance of showing efficacy in a clinical trial," said Professor Shattock while giving a speech at the International Microbicide Conference 2010 in Pittsburgh, Pennsylvania, USA. "Then it has led to increasing emphasis on combination products."

*Chaarm partners during the Kick-off meeting in Rome in 2010*

"Not only to ensure that any microbicide will hit the widest possible diversity of virus, but also potentially to reduce the risk of resistance," he added.

The use of combination anti-retrovirals is standard in HIV treatment and is used as post-exposure prophylaxis in developed countries for the management of individuals exposed to HIV occupationally and through sexual exposures. Nonetheless, the use of combination products in the project is a key aspect, primarily because they will increase the barrier to the development of resistance and may also improve efficacy.

"It is logical to use combinations of agents with potent anti HIV activity but which act through slightly different mechanisms with the aim that they provide synergistic protection and a higher barrier against resistant HIV strains," said Dr Georgina Morris, HYMS (Hull York Medical School), Centre For Immunology and Infection, University of York and a member of the York HIV Research Group.

"The ideal candidates would have a long duration of action in tissues, be highly potent and have a high barrier to drug resistance," said Dr Morris.

Microbicide candidates that will enter clinical trials will be selected based on several factors: the best class of inhibitor, potency, selectivity, stability, stage of development, resistance levels and ease at which they are able to be formulated in combination.
The CHAARM project will continue to investigate protease and proteasome inhibitors as potential microbicides as well as focusing on non-nucleoside reverse transcriptase inhibitors, specifically Dapivirine and the nucleoside analog reverse transcriptase inhibitor Tenofovir. In addition, new small molecule inhibitors of HIV-1 fusion will be developed as microbicides together with novel protein and peptide inhibitors based on CCR5 ligands such as RANTES derivatives.
"NNRTIs such as dapivirine are ideal with respect to half-life and potency but have relatively low barriers to resistance," said Dr Morris. "Darunavir is one of the most potent ARVs currently available and, as a protease inhibitor, has a high barrier to resistance, Combinations containing both PIs and NNRTIs are therefore very promising."

The use of combination products in the project is a key aspect, primarily because they will increase the barrierto the development of resistance and may also improve efficacy

**Future of the CHAARM project and microbicide research**

If CHAARM researchers succeed in developing an effective microbicide against HIV, it would have a major impact not only in the field, but also on sexual and reproductive health in general.
Even if microbicide products show promise as preventative options for reducing HIV transmission, they are not seen as an individual solution, but rather as products that will be used in addition to other preventative methods.

Although the CHAARM project is only a few months into its research, being a five-year program starting January 2010 and lasting until December 2014, there is a sustained level of anticipation of the results.
"In July this year the CAPRISA 004 trial yielded the first clearly positive results in a microbicide efficacy trial, providing significant momentum to the field," said Dr Hartley. "The CHAARM project now has the opportunity to build on this success, hopefully contributing to the development of a new microbicide product capable of making an impact on the HIV epidemic."

# Forthcoming events

**Antibody Engineering & Design (Accelerating the development of therapeutic antibodies through engineering approaches) 22 - 24 of February 2011 – GERMANY - Intercity Hotel Frankfurt Airport, Frankfurt**
The Antibody Engineering & Design Conference will count with experts of areas like pharmaceutical industry, neuroscience, structural biology, oncology research and antibody design. Also, there will be two workshops related with the development of Antibody Therapeutics and how to control the immunogenicity.

**18th Conference on Retroviruses and Opportunistic Infections, Feb 27 - 2 March 2011 - Hynes Convention Center, Boston, USA**
Over 4,000 leading researchers and clinicians from around the world will convene in Boston, Massachusetts, for the 18th Conference on Retroviruses and Opportunistic Infections (CROI). CROI is a scientifically focused meeting of the world's leading researchers working to understand, prevent, and treat HIV/AIDS and its complications. The goal of CROI is to provide a forum for translating laboratory and clinical research into progress against the AIDS epidemic.

**2011 CHAARM consortium meeting, 15 - 17 of March - ITALY - Camogli**

**HIV Evolution, Genomics and Pathogenesis, 20 -25 of March 2011 – CANADA - Whistler Conference Centre, British Columbia**
Part of the Keystone Symposia Global Health Series, this symposium is supported by the Bill&Melinda Gates Foundation and sponsored by one of our partners, Gilead Sciences Inc. The Symposium will cover specific areas like virus-specific microbicides, vaccine effects on transmission, protection from HIV and mucosal immunology in Transmission and Prevention, among others.

**3rd National Conference: Current Issues in Sexual Health, 24-25 of March 2011 – UNITED KINGDOM - The Hallam Conference Center, London**
The conference of 2011 brings together leading experts in the field of genitourinary medicine, sexual health and infectious diseases, to discuss the central issues and current challenges in the prevention and treatment of sexually transmitted infections (STIs)

**20th Annual HIV Conference of the Florida/Caribbean AIDS Education and Training Center, 13 -14 of May 2011– USA - Hilton, Orlando**
The Florida/Caribbean AIDS Education and Training Center's mission is to ensure that health care professionals in Florida, Puerto Rico and the U.S. Virgin Islands receive state-of-the-art information, training, and consultation on the prevention and treatment of HIV and AIDS.

**4th Congress of European Microbiologist FEMS 2011, 26 - 30 of June 2011 – SWITZERLAND - Palexpo Geneva, Geneva**
The 4th Congress of European Microbiologists, organized by "The Federation of European Microbiological Societies" (FEMS), offers professionals the latest information on microbiology an in-depth understanding of the interdependence between key fields, like virology, clinical microbiology and pathogenesis, molecular microbiology and genomics, among others.

**6th IAS Conference on HIV Pathogenesis, Treatment and Prevention, 17 - 20 of July 2011 – ITALY – Auditorium, Rome**
The 6th IAS Conference on HIV will be dedicated to the exploration and implementation of HIV science. A crucial opportunity for the world´s leading scientists, clinicians, implementers, public health experts and community leaders to examine the latest developments in HIV-related research and to explore how scientific advances can be translated quickly into effective interventions to prevent and treat HIV.

**7th European Congress on Tropical Medicine and International Health, 3 - 6 of October 2011 - SPAIN**
This time more emphasis on Global Health under the motto "Global Change, Migration and Health". Surveillance and prevention of diseases in an era of migration and global change are issues where the voice of the European Federation must be heard and this will be a unique opportunity for open debate, discussion and presenting practical examples from which the main world institutions of International Health could benefit. Moreover, during 2010 the EU Parliament and Council discuss a common policy and role to play regarding global health issues.

**13th European AIDS Conference / EACS, 12 - 15 of October 2011 – SERBIA - Belgrade**
The 13th European AIDS is organized every two years by the European AIDS Clinical Society, a not-profit group of European physicians, clinicians and researchers in the field of HIV / AIDS

**Autoimmunity Congress Asia (ACA), 17 - 19 of November 2011 – SINGAPORE - Suntec, Convention & Exhibition Centre**
ACA 2011 promises to provide the latest lectures and discussions on every aspect of the basic research and treatments in the field of autoimmune disease. It will include a list of renowed speakers who will discuss novel aspects of autoimmunity in diagnostic, patho genesis and therapy.

**16th International Conference on AIDS & STIs in Africa, 4 - 8 December 2011 – ETHIOPIA - Millenium Hall, Addis Ababa**
The 16th Conference of ICASA serves as an advocacy platform to mobilize African leaders, partners and the communities to increase the response. It will be a forum for exchange of knowledge of experiences and best practices in Africa and around the globe to scale up evidence-based response on HIV/AIDS/STIs, TB and Malaria.

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# Combined Highly Active Anti-retroviral Microbicide


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