



**INTERNATIONAL SOCIETY
FOR
IMMUNOLOGY OF REPRODUCTION**

Newsletter 2012

CALL FOR MEMBERSHIP OF ISIR

New members can now access Membership application form through ISIR site.

Please submit the application to:

Satish Kumar Gupta, Secretary - General to ISIR
Reproductive Cell Biology Laboratory,
National Institute of Immunology,
Aruna Asaf Ali Marg,
New Delhi-110067, India.
Phone: 91-11-26741249, Fax: 91-11-26742125, E-mail: skgupta@nii.ac.in

ISIR membership dues for three years are 50 US dollars.

We are pleased to inform you that for ASRI/ ESRI/ JSRI Members, ISIR Membership fees for three years is 30 US dollars. Also we welcome PhD/MD students as ISIR members with a reduced fee of US 30 dollars for 3 years.

The 12th ISIR congress will be held from May 29 to June 3, 2013 at Boston, Massachusetts, USA. Please join ISIR as a member.

Payment of Membership Dues

ISIR is happy to announce that members can now pay their dues through PayPal from ISIR website.

PayPal lets you send money to our ISIR treasurer Prof. Shigeru Saito, Department of Obstetrics & Gynaecology, Faculty of Medicine, University of Toyama, 2630 Sugitani, Toyama 930-0194, Japan.

Phone: 81-76-434-7355; Fax: 81-76-434-5036 E-mail: s30saito@med.u-toyama.ac.jp.

MAKING OF A UNIQUE VACCINE FOR CONTROL OF FERTILITY



(Prof. G.P. Talwar)

We selected hCG (human chorionic gonadotropin) as the target on the consideration that hCG is not normally made by any organ of the non pregnant female. Hence, antibodies against hCG would be devoid of cross-reactivity and would be completely safe. On the other hand, if competent to neutralize the bioactivity of hCG, these would prevent pregnancy by blocking implantation of the embryo onto the endometrium. hCG is an early product of the fertilized egg & is detectable in the culture fluid of eggs fertilised *in vitro* (Fischel,

Edwards, Evans Science 1984; 223: 816-818). It is further vital for implantation of the embryo. Marmosets embryos exposed to anti β -hCG antibodies fail to implant, whereas those exposed to normal immunoglobulins implant normally (Hearn *et al*; J. Reprod. Fertil. 1988; 36: 49-56).

Overcoming immunological tolerance

Women are tolerant immunologically to hCG and its subunits. She is flooded with hCG during pregnancy. To make it immunogenic, we tagged the β subunit of hCG (which gives the hCG molecule its identity) to a carrier, tetanus toxoid (TT). hCG β -TT was immunogenic in women & generated antibodies reactive with hCG (Talwar *et al*; Proc. Natl. Acad. Sci USA 1976; 73: 218-222).

The immunogenicity, safety and reversibility of this vaccine were confirmed by trials conducted in Finland, Sweden, Chile and Brazil under the auspices of ICCR of Population Council (Nash *et al*, Fertil. Steril, 1980; 34: 328-335). The antibody titers varied from woman to woman, as should be expected, and only one out of four made high titers of antibodies. To enhance immunogenicity, we created a hetero-species dimer (HSD), in which hCG β was annealed non-covalently with alpha subunit of ovine LH (Talwar, Singh, Rao, J. Reprod. Immunol. 1988; 14: 203-212). HSD-TT/DT (diphtheria toxoid) was taken through preclinical toxicology. With permission of Drugs Controller General of India and the Institutional Ethics Committee, it was taken through Phase 1 Safety and thereafter through Phase 2 efficacy trials in sexually active married women of proven fertility, enrolled by informed written consent. No previous proof

existed of the contraceptive action of anti-hCG antibodies, nor was it known as to how much anti-hCG antibodies would be necessary to prevent pregnancy. A putative threshold of 50 ng/ml of bionutralizing antibodies was fixed for testing. These historical trials, the first ever on a birth control vaccine, established that indeed women of reproductive age engaged actively in sexual intercourse, atleast once or twice a week, did not become pregnant, so as long as the titers remained above 50 ng/ml. They readily conceived with titers falling below 35 ng/ml. Indeed 22 pregnancies were recorded at low titers. The regain of fertility was immediate in the cycle, when titers had declined and women did not take a booster (Talwar et al., Proc. Natl. Acad. Sci. USA 1994; 91: 8532-8536).

After a dormant period of over 12 years, work on anti-hCG vaccine was revived. A recombinant vaccine has been made consisting of hCG β fused at C-terminal to β subunit of heat labile enterotoxin of *E. coli*. Adsorbed on alum and given along with a Drugs Controller General (DCGI) (India) and USFDA approved non-pathogenic *Mycobacterium indicus pranii* (Talwar, Ahmad, Saini Infect. Genet. Evol. 2008; 8: 100-101; Saini, Raghuvanshi, Talwar et al., PLoS ONE 2009; e6263), formerly Mw, developed as an immunotherapeutic vaccine against multibacillary leprosy (Review: Talwar Int. Rev. Immunol. 1999; 18: 229-249) induces very high titers of antibodies not only in BALB/cJ mice (Puruswani & Talwar Vaccine 2011; 29; 2341-2348), but also in 4 other genetic strains of mice (Puruswani, Talwar, Richa et al., J. Reprod. Immunol. 2011; 91: 24-30). Every mouse responded immunologically (100% positivity of response). The titers were several folds higher than 50 ng/ml, the putative threshold to prevent pregnancy.

The Indian Council of Medical Research is getting the Toxicology of this vaccine done from a recognized establishment, after which it will go back for trials in women for contraception. The big advantage of this vaccine is that it does not interfere in the normal reproductive functions of the female; she ovulates normally, makes normally her sex steroids and continues to have regular menstrual cycles.

Additional Benefits

Since some years, a number of reports have appeared on the ectopic or unexpected expression of hCG or its subunits by a variety of cancers at advanced stage, when these cancers are

invariably refractory to chemotherapeutic drugs and are metastasised (for review see Talwar, Gupta, Shankar, Am. J. Reprod. Immunol. 2011; 66: 26-39). hCG is not only important for implantation of the embryo and thereby on the onset of pregnancy, it is immuno-protective, promotes angiogenesis and invasiveness of cancers. It is thus not unlikely that an anti-hCG vaccine, as also humanized monoclonal antibodies against hCG may find utility in treatment of terminal cancers. The replication of more than one cell lines developed from patients expressing ectopically hCG is blocked in culture by anti-hCG antibodies. Their action has also been studied *in vivo*. Chago, human lung cancer cells fail to grow in nude mice as a function of the dose of antibodies administered (Kumar, Talwar, Biswas. J. Natl. Cancer Inst. 1992; 84; 42-47).

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RISUG: A PROMISING APPROACH TO MALE CONTRACEPTION



(Prof. N. K. Lohiya)

Overpopulation has led the world to consider the consequences of overused limited resources. With grueling more than 7 billion individuals and consistently growing population rate, it is necessary to take ethical and acceptable measures to control it. Since women by nature are bound to be pregnant, they are mostly burdened with the responsibility of population and ethical issues which engage women to go through contraceptive measures.

Involvement of men is vital in controlling this mammoth population; it is unfortunate that very few successful methods of contraception for men are available such as condoms and vasectomy. It is to be noted that regardless of willingness of men to contribute in population control, none of the methods promises 100% sterility and/or 100% reversal following contraception, which eventually reduces the mass appeal. Need of a contraception for men, which deliver easy administration, long lasting efficacy and complete reversibility with no side effects is warranted.

Vas deferens has been targeted for many years to induce sterility due to its minimum hormonal and/or systematic interference. Techniques such as vas chip, HIFU transducer, IVD, injectable plug etc. have been under observation. Surprisingly, none of these methods succeeded through successful clinical trials. Invention of styrene maleic anhydride (SMA), an intravasal injectable copolymer was able to achieve instant and complete sterility through single injection in both vas deferens (Guha, 1996). In addition, it also proved to be effective for more than 10 years following injection of the copolymer. With history of names in past three decades, it was finally named as RISUG (Reversible Inhibition of Sperm Under Guidance), under the impression that the contraception can be reversed at any time following injection. In 1979 the first paper on RISUG documented a novel polymer which when injected into the vas deferens, lowers the pH sufficiently enough to kill the sperm passing through it (Misro *et al.*, 1979). Study also revealed that the polymer does not degrade following injection and can be flushed out to regain fertility. Since 1979 there has been much advancement in development of RISUG and its reversibility. The US patent 5488075 laid the objectives for invention of RISUG, which was (i) to propose an improved intravasal contraceptive, (ii) to propose a contraceptive which no longer requires

surgery, and (iii) to propose a contraceptive, which no longer requires the body to develop an enhanced level of antibodies to the sperm. So far it seems to keep up with the promises made during its development (Guha, 1996).

RISUG is a copolymer made up of two monomers, styrene and maleic anhydride, through cobalt $60\ \gamma$ - irradiation in presence of nitrogen and ethyl acetate at the rate of 0.2-0.24 megarad for every 40 g of polymer (Guha, 1996). A recent paper by Jha *et al.*, (2010) examined the effect of γ -dose rate and total dose interrelation on the RISUG hydrogel, which revealed that a range of 18-24 Gy/min γ -total dose rate and 2.0-2.4 kGy γ -total doses are suitable for desirable performance. For an injectable viscosity (1.5-1.9 Pa) the polymer is dissolved in dimethyl sulfoxide (DMSO) in 1:2 ratios, it also helps in retention of polymer inside the vas deferens. The further development of RISUG acquired two more components such as Cu and Fe_3O_4 in 1:30 ratio, this composition was named as 'Smart RISUG'. Other than contraception RISUG is also targeting other conditions such as prostate cancer and benign prostatic hyperplasia and named as RSUGadv and RISUG-PH, respectively (Jha *et al.*, 2009a; 2009b).

The mode of action of the polymer is unknown; however, few methods were proposed by which the polymer was able to disrupt the sperm plasma membrane, such as, partial occlusion, complete occlusion, pH lowering, charge effect, sulphur moiety and protein-SMA agglomerate (Guha, 1996). According to Chaki *et al.*, (2003) following vas occlusion with RISUG the epididymal enzyme α -glucosidase remained in the ejaculate, however, the amount reduced by many folds. Thus, it was concluded that the mode of occlusion by RISUG (SMA:DMSO::1:2) is partial (Chaki *et al.*, 2003). Another study by Lohiya *et al.*, (1998) proposed complete occlusion by RISUG with same dose, as the animal models constantly became azoospermic following a brief period of time. *In vitro* studies stated that the hydrolyzed RISUG has a pH of 4.0-4.5 and it is positively charged which lead to the disruption of sperm when in contact with RISUG (Guha, 1996). There are no reports available on sulphur moiety and protein-SMA agglomerate. The usual aberration in ejaculated sperm were seen as damaged acrosome, loss of segmented columns, numeric aberration in centriole of the neck, degeneration of mitochondrial sheath and axoneme in the mid-piece and absence of plasma membrane in the mid-piece and tail. More work is required to ascertain the mode of action of the intravasal injectable polymer.

Phase I clinical trial of RISUG was conducted, mainly to evaluate the safety and the dose dependent efficacy (Guha *et al.*, 1993). Subjects were volunteered for RISUG injection and reported with no serious health and/or behavioral changes. In phase II clinical trial subjects were examined for sperm count, motility and morphology. Study showed that all subjects became azoospermic in varied time period (Guha *et al.*, 1997). In a follow-up study of phase II clinical trial, subjects were evaluated for dose dependent efficacy and concluded that vas occlusion with RISUG provides sterility for up to two years (Guha *et al.*, 1998). The extended phase III clinical trial is ongoing at many centers. In 2003, Chaki *et al.*, (2003) reported that fertile subjects who were voluntarily injected with RISUG, showed immotile and abnormal spermatozoa following vas occlusion. Abnormalities were reported as bent and coiled tail, amorphous head with large elongated tail, double and tapering head. Study also reported presence of immature germ cells in all subjects including azoospermic subjects. More enrolments and follow-up of volunteered subjects are being done at many centers around northern India. Follow-up studies on subjects in phase III clinical trial, suggest that the RISUG efficacy may last for more than 10 years without any side-effects. The successful completion of ongoing phase III clinical trials will determine induction of RISUG as an additional method of reversible male contraceptive.

At higher pH, RISUG tend to dissolve easily, pH ranging from 8-9 in a solution unstable the components of RISUG and allows it to release from the wall of vas deferens (Koul *et al.*, 1998). Dimethyl sulfoxide (DMSO) and sodium bicarbonate (NaHCO_3) are couple of solvents used to dissolve SMA. Besides DMSO and NaHCO_3 , non invasive reversal has also been applied in few previous studies. Lohiya *et al.* (1998), reported a non invasive technique which included percutaneous squeezing, electrical stimulation, vibration application and percussion in langur monkeys (Lohiya *et al.*, 1998). According to another study, a repeated vas occlusion with the polymer followed by non-invasive reversal could be used as a spacing method for male contraception (Lohiya *et al.*, 2000). Injection of DMSO to flush out the RISUG was also initially reported by Lohiya *et al.*, (2010) it also evaluated sperm characteristics and teratology of F_1 progeny following vas occlusion with RISUG and reversal by DMSO in albino rats. Result showed 100% resumption of fertility and normal skeletal morphology of F_1 progeny.

Long term effect of RISUG inside the lumen of vas deferens is required as it shows exfoliation of the epithelial cells following vas occlusion. Details on other aspects such as anti-sperm

antibodies, genotoxicity and carcinogenicity over long-term exposure to the polymer are not available. The health of F₁ progeny following reversal is also need to be evaluated. Complete sterility for many years without any major side-effects and promising result of reversal in animal models, undoubtedly, make RISUG as one of the most feasible and leading contraceptive. However, to apply it on the normal healthy men it requires more evidence and convincing conclusion. Unlike medicine, contraceptive is for prevention and not for cure, hence, any side effect will not be tolerated. RISUG is required to produce more robust evidence in phase III clinical trial before it comes to the market.

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12th INTERNATIONAL CONGRESS OF REPRODUCTIVE IMMUNOLOGY



Building Bridges in Reproductive Immunology **International Society for Immunology of Reproduction**

Hosted by American Society
of Reproductive Immunology



The purpose of this congress is to further advance the continued development and education of reproductive immunology, sexually transmitted infections and up-to-date technical know-how specifically focused on clinical and translations research.

May 29 – June 01, 2013

Boston Park Plaza Hotel, Boston, Massachusetts, USA



ISIR Keynote Speaker

Dr. Francoise Barre-Sinoussi

Director Unité de Régulation des Infections Rétrovirales, Institut Pasteur
Nobel Prize Winner in Physiology/Medicine 2008

Scientific Program Committee

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More information at: www.isir.org.in www.theasri.org



ISIR
International Society for
Immunology of Reproduction



ASRI
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Reproductive Immunology



On-line Abstract Submissions Oct 15 – Dec 15, 2012

Scientific Sessions

- Immunology, Implantation and Assisted Reproductive Technology
- Mucosal Immunology and Sexually Transmitted Infections
- New Concepts HIV Susceptibility and Acquisition
- Autoimmunity, Endocrine Disorders and Reproduction
- Novel Concepts in Immunological Tolerance at the Maternal Fetal Interface
- Immune Related Pregnancy Complications
- Role of Mesenchymal Stem Cells in Reproductive Development and Pathogenesis
- Immunology of Preeclampsia
- Male Infertility: Includes Contraception and Vaccines
- Biomarker Discoveries in Reproduction

Pre-Meeting Symposia

May 28 – 8:00 am–5:00 pm / May 29 – 8:00 am–12:00 pm

Symposia #1: New Methods for Studying Immune Cells in the Reproductive Tract

The objective of the symposium is to provide to new investigators and trainees an update on techniques for the study of immune cells and cells from the female reproductive tract. The workshop will provide "hands on" opportunity and technical demonstrations of new technologies with direct application for reproductive immunology.

Symposia #2: Hormone Regulation of the Mucosal Environment in the Reproductive Tract and the Prevention of HIV Infection

The overall objective of this Symposia is to emphasize the importance of mucosal immunity in the male and female reproductive tract for transmission of HIV and to identify the means whereby the mucosal immune system can be optimized to achieve protection against HIV acquisition.

Young Investigators

To promote participation of young investigators, ISIR-ASRI will provide opportunities

- 1) to present at plenary sessions, 2) to moderate sessions, 3) to present posters, 4) engage in social mixer and mentor luncheon, 5) to attend a satellite graduate course, and 6) to apply for travel awards.

Meeting Organizers



Chuck Wira
The Geisel
School of Medicine
at Dartmouth



Gil Mor
Yale University



Surendra Sharma
Brown University

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American Society for **REPRODUCTIVE IMMUNOLOGY**

2nd Clinical Reproductive Immunology Symposium

October 27-28th, 2012

Omni New Haven Hotel At Yale

New Haven, CT USA

Session Topics

Microbiome & Reproduction
Preeclampsia
Infection, Inflammation & Preterm Birth
Demystifying Lab Techniques of Reproductive Immunology for the Clinician

Maternal Obesity & Diabetes
Autoimmunity & Pregnancy

More information at: www.theasri.org

Speakers

Kjersti Aagaard-Tillery
Asif Ahmed
Elizabeth Bonney
Silvia Daher
Raina Fichorova
Christina Han
Joanne Kwak-Kim
Michael Lockshin
Udo Markert

Gil Mor
Jane Norman
Errol Norwitz
Evangelos Ntrivalas
Mana Parast
Gregor Reid
Roberto Romero
Shigeru Saito
Clare Tower

Registration Rates

	ASRI member	Non-member
Regular delegate	\$175	\$200
Local delegate	\$125	\$125
Trainee* delegate	\$75	\$100

*Residents, Fellows, Students, Post-docs

More information at www.theasri.org

Omni New Haven Hotel At Yale

Room rate: \$189/night

Book by Sept 26th 2012

<http://www.omnihotels.com/FindAHotel/NewHavenYale/MeetingFacilities/ASRI.aspx>

**AMERICAN SOCIETY FOR REPRODUCTIVE IMMUNOLOGY
2nd Clinical Reproductive Immunology Symposium**

“Using Reproductive Immunology to Improve Clinical Practices”

**Omni New Haven Hotel at Yale, New Haven, CT, USA
October 27-28, 2012**

Registration at www.theasri.org

Saturday October 27th 2012

7.00am - 5.00pm Registration
7.00am - 7.50am Breakfast
7.50am Welcome and Opening Address
 Vikki M. Abrahams, PhD
7.55am Presidential Greetings
 Udo Markert, PhD

Session I: Preeclampsia

Chair Surendra Sharma, MD, PhD (Women & Infants Hospital, Brown University, USA)

8.00am Novel insights into the role of the adaptive immune system in preeclampsia: regulatory and cytotoxic T cells.
 Mana M. Parast, M.D., Ph.D. (University of California San Diego, USA)
8.30am Biomarkers of preeclampsia for the risk assessment of patients early in pregnancy.
 Errol Norwitz, MD, PhD (Tufts Medical Center, USA)
9.00am Do statins have a role in the prevention of preeclampsia?
 Asif Ahmed, PhD (Edinburgh University, UK)
9.30am Questions and Answers
9.50am Coffee break

Session II: Maternal Obesity and Diabetes

Chair Silvia Daher, PhD (Sao Paulo Federal University, Brazil)

10.10am Effects of glucose on placental inflammation
 Christina Han, MD (Yale University, USA)
10.40am The link between obesity and the maternal immune system
 Jane Norman, MD (Queen's Medical Research Institute, Edinburgh)

11.10am Profiling inflammatory mediators in gestational diabetes mellitus
Silvia Daher, PhD (Sao Paulo Federal University, Brazil)

11.40am Questions and Answers

12.00pm Lunch

Session III: The microbiome and reproduction

Chair *Charles Wira, PhD (Geisel School of Medicine at Dartmouth, USA)*

1.00pm Regulation of the vaginal microflora and its impact on reproductive health
Raina N. Fichorova, MD, PhD (Brigham and Women's Hospital, Harvard Medical School USA)

1.30pm Contributions of the maternal microbiome to preterm birth
Kjersti M. Aagaard, M.D., Ph.D. (Baylor College of Medicine, USA)

2.00pm Can probiotics improve reproductive health and pregnancy outcome?
Gregor Reid, Ph.D., (University of Western Ontario, Canada)

2.30am Questions and Answers

2.50pm Coffee Break

Session IV: Demystifying laboratory techniques of Reproductive Immunology for the Clinician

Chair *Raina N. Fichorova, MD, PhD (Brigham and Women's Hospital, Harvard Medical School USA)*

3.10pm Protein and microRNA detection in tissues and biological fluids by multiplex analysis
Udo Markert, PhD (Friedrich-Schiller-Universität, Germany)

3.40pm Cell-based assays for immunophenotyping and function using flow cytometry
Evangelos Ntrivalas, MD, PhD (Foundation for Blood Research, USA)

4.10pm Animal Models of Adverse Pregnancy Outcomes
Elizabeth Bonney, MD (University of Vermont, USA)

4.40pm Questions and Answers

5.00pm Adjourn

6.00pm Dinner

Sunday October 28th 2012

7.30am - 8.30am Breakfast

Session V: Infection, Inflammation and Preterm Birth

Chair Elizabeth Bonney, MD, PhD (University of Vermont, USA)

- 8.30am The role of inflammation and the immune system in preterm labor
Gil Mor, MD, PhD (Yale University, USA)
- 9.00am Novel methods to detect infection for predicting the prognosis of preterm birth
Shigeru Saito, MD, PhD (University of Toyama, Japan)
- 9.30am Progesterone to prevent preterm delivery
Roberto Romero, MD (Perinatology Research Branch, NIH, USA)
- 10.00am Questions and Answers
- 10.20am Coffee break

Session VI: Autoimmunity and Pregnancy

Chair Joanne Kwak-Kim, MD (Rosalind Franklin University, USA)

- 10.40am Using antiphospholipid antibodies to predict adverse pregnancy outcome
Michael Lockshin, MD (Hospital for Special Surgery, USA)
- 11.10am Regulatory T cells in lupus and pregnancy
Clare Tower, MD, PhD (Manchester University, UK)
- 11.40am Management of the patient with an antiphospholipid antibody
Joanne Kwak-Kim, MD (Rosalind Franklin University, USA)
- 12.10pm Questions and Answers
- 12.30pm Closing Remarks and Meeting Adjourn
Vikki M. Abrahams, PhD

GETTING TO NEW HAVEN

By Train

From New York City:

The MTA Metro-North offers service from Grand Central Station (NYC) to Union Station (New Haven).

From Other East Coast Locations to Union Station (New Haven):

Amtrak has trains from **Washington, DC, Baltimore, Philadelphia, Newark, New York (Penn Station), Providence, and Boston.**

By Plane

Tweed Airport in New Haven is serviced by US Air. The airport is approximately a 10 minute taxi ride away from downtown New Haven and Yale.

Bradley Airport in Windsor Locks, CT is serviced by all major airlines. It is approximately 1 hour away from from downtown New Haven and Yale. **Connecticut**

Limo (<http://www.ctlimo.com/index.cfm>) is a shuttle service that travels to and from Bradley Airport in Hartford.

LaGuardia and JFK Airports in New York are serviced by all major airlines. They are approximately 1.5-2 hours away from from downtown New Haven and Yale. The **GO**

Connecticut Airport Shuttle from LaGuardia or JFK will reach New Haven. Reservations can be made by phone or online: <http://www.2theairport.com/>

By Car

For directions from I-91S, I-95N, I-95S, New York, and Boston, visit: <http://www.infonewhaven.com/content/getting-here-car>.

Parking

The Omni New Haven Hotel At Yale has its own parking garage. In addition, there are public parking garages and street parking around the conference area. The closest public parking garage is the Crown Street Garage, which is located on the corner of College and Crown, with access from College Street. This garage is located next to the Shubert Theater (247 College Street).



A unique event that will create synergies between basic science, research and daily clinical practice to benefit patient care

Scientific Program

Thursday, November 8, 2012

14:30-16:30	SESSION 1: Harvesting and Harnessing Human Ovarian Stem Cells <i>Supported by an unrestricted grant by IBSA</i> Chairpersons: Carlos Simón , Spain; Zeev Shoham , Israel; Gerald Schatten , USA
14:30-15:00	Isolation and characterization of OSCs in human Jonathan Tilly , USA
15:00-15:30	Formation of new human follicles from OSCs in vitro Evelyn Telfer , UK
15:30-16:00	Testing genetic integrity of OSC formed oocytes David Albertini , USA
16:00-16:30	Tumorigenic potential of OSCs; The other side Dori Woods , USA
16:30-17:00	Coffee Break/ Poster Viewing
17:00-19:00	SESSION 2: The Mystery of Fertility Preservation Chairpersons: Adrian Ellenbogen , Israel; Sherman Silber , USA; Kenneth Korach , USA
17:00-17:30	The oocytes as the conductor of the reproductive symphony Pasquale Patrizio , USA
17:30-18:00	Directional freezing or vitrification; which child do I prefer? Amir Arav , Israel
18:00-18:30	Vitrification- as applied embryos and ovaries Sherman Silber , USA
18:30-19:00	Oocyte Cryopreservation for Cancer and Deferred Reproduction Nicole Noyes , USA

19:00	Ovarian Club Meet & Greet
Friday, November 9, 2012	
08:30-10:30	SESSION 3: Recruitment, follicular development and oocyte competence <i>Supported by an unrestricted grant by IBSA</i> Chairpersons: Evelyn Telfer, UK; Jeremy Thompson, Australia; Ariel Hourvitz, Israel
08:30-09:00	Molecular characterization of human folliculogenesis and ovulatory events from basic research to clinical application Ariel Hourvitz, Israel
09:00-09:30	What granulosa cell- and oocyte-specific ARKO mice can tell us about folliculogenesis and female fertility Aritro Sen, USA
09:30-10:00	CHK1 is involved in SAC satisfaction and preservation of DNA integrity in mouse oocytes Jan Motlik, Czech Republic
10:00-10:30	Appropriate meiotic segregation in oocytes: possible practical implications Nava Dekel, Israel
10:30-11:00	Coffee Break/ Poster Viewing
11:00-13:00	SESSION 4: The Environmental Influence of Oocytes and Embryos Chairpersons: Satish Gupta, India; Patrick Quinn, USA; Maurizio Dattilo, Italy
11:00-11:30	Environmental exposures and gametogenesis: are exposures affecting our reproductive health? Patricia Hunt, USA
11:30-12:00	Late procreation in the main determinant of multiple pregnancies Piergiorgio Crosignani, Italy
12:00-12:30	Environmental Action on Ovarian toxicity Kenneth Korach, USA
12:30-13:00	Relationship of telomere length in human gametes and zygotes with semen analysis parameters, sperm DNA fragmentation, smoking status and treatment outcome: What are the clinical implications of telomere length for embryo viability? Geraldine Hartshorne, UK
13:00-13:45	Lunch Break
13:45-14:15	New Horizons: The Voice of the Industry <i>Company symposium sponsored by Abbott</i>

14:15-15:45	SESSION 5: Oocytes and Embryos: Clinical Relevance Chairpersons: Shevach Friedler , Israel; Denny Sakkas , USA; Marcos Meseguer , Spain
14:15-14:45	Thrombophilia: Is there an effect of thrombophilia (increase coagulability) in oocyte quality? What mutation (if any) of the coagulation factors might be of importance? What is the mechanism of action? Can treatment with low molecular weight heparin (claxane-enoxaparin) improve oocyte quality and how? Michael Kuperminc , Israel
14:45-15:15	Alterations in oocyte, embryo and/or endometrium quality in endometriosis: identifying the weak link Dominique De Ziegler , France
15:15-15:45	Ovarian stimulation for IVF , the oocyte and the embryo: possible detrimental effects Esther B. Baart , The Netherlands
15:45-16:15	<i>Coffee Break/ Poster Viewing</i>
16:15-18:15	SESSION 6: Biomarkers: Clinical Relevance Endorsed by IVI Chairpersons: Carlos Simón , Spain; Samir Hamamah , France; Maria Lalioti , USA
16:15-16:35	Polymorphisms as biomarkers of ovarian reserve and oocyte quality Maria Lalioti , USA
16:35-16:55	Cumulus cells as markers of oocyte and embryo quality Emre Seli , USA
16:55-17:15	Clinical relevance of morphokinetics to assess embryo viability Marcos Meseguer , Spain
17:15-17:35	Non invasive metabolomic profiling of embryos using spectroscopy Denny Sakkas , USA
17:35-17:55	Use of Comparative Genomic Hybridization (CGH) for embryo assessment. Clinical results Carmen Rubio , Spain
17:55-18:15	Conclusion Carlos Simón , Spain
18:15	<i>Ovarian Club Meet & Greet</i>
Saturday, November 10, 2012	
08:30-10:30	SESSION 7: Clinical implication of ICSI failure Supported by an unrestricted grant by IBSA Chairpersons: Shlomo Mashiach , Israel; Nicole Noyes , USA; Jonathan Van Blerkom , USA
08:30-09:00	The sperm-egg, fertilization and the embryo: Egg activation - calcium

	oscillations and outcome in pre and post implantation development Jean-Pierre Ozil , France
09:00-09:30	The mechanisms of mammalian sperm-egg interaction John C. Herr , USA
09:30-10:00	Cell cycle control in human embryos: Why all the aneuploidy? David Albertini , USA
10:00-10:30	Post-transcriptional regulations during oocyte-to-zygote transition Petr Svoboda , Czech Republic
10:30-11:00	<i>Coffee Break/ Poster Viewing</i>
11:00-13:00	SESSION 8: Metabolic programming during the preconception period and implications for subsequent fetal, neo-natal and adult health Chairpersons: Ellen Anckaert , Belgium; David Albertini , USA; Carlos Simón , Spain
11:00-11:30	Preconception protein levels and subsequent fetal growth Tom Fleming , UK
11:30-12:00	Cellular disruption within oocytes and early embryos caused by maternal diabetes – basic and clinical implications Kelle H. Moley , USA
12:00-12:30	O-linked glycosylation mediates the hyperglycemic pathology in oocytes and early embryos? Jeremy Thompson , Australia
12:30-13:00	Dietary methyl donors during the preconception period and their influence on subsequent development Kevin Sinclair , UK
13:00-13:45	<i>Lunch Break</i>
13:45-14:15	New Horizons: The Voice of the Industry Company symposium sponsored by Ferring Why Health Care Professionals and Pharma Must Work Together to Identify and Meet Patients' Needs Julian Jenkins , Switzerland
14:15-16:15	SESSION 9: The Fertilization Process Chairpersons: Norbert Gleicher , USA; Gwo-Jang Wu , Taiwan; Jan Motlik , Czech Republic
14:15-14:45	Membrane and cytoplasmic influences on penetration and post penetration development-- can basic science provide markers for the clinical embryologist Jonathan Van Blerkom , USA

14:45-15:15	Role of Chromatin Remodeling Proteins in Chromosome Segregation and the Transmission of Aneuploidy in Mammalian Oocytes. Basic research with clinical implications R. De La Fuente, USA
15:15-15:45	The Minimal Oocyte – or How to construct an artificial egg? what are the requirements for the oocyte to achieve it mission Gerald Schatten, USA
15:45-16:15	Human Tubal Fluid: In Vivo and In Vitro Patrick Quinn, USA
16:15-16:45	<i>Coffee Break/ Poster Viewing</i>
16:45-18:45	SESSION 10: Aging Chairpersons: Dominique De Ziegler , France; Piergiorgio Crosignani , Italy; Zeev Shoham , Israel
16:45-17:15	How androgens and genes affect follicle maturation and ovarian aging Norbert Gleicher, USA
17:15-17:45	How do Oocytes Tell Time? (Oocyte Aging and Can the Chronology Sensing Machinery Be Reset) Gerald Schatten, USA
17:45-18:15	Female reproductive aging: new insights into an old problem Mary Herbert, UK
18:15-18:45	The impact of Y chromosome like regions of the X chromosome (palindromes and amplicons) on ovarian reserve Sherman Silber, USA

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INTERNATIONAL CONFERENCE ON "REPROMICS"

7-9 February, 2013

Thiruvananthapuram, Kerala, India

Rajiv Gandhi Centre for Biotechnology, Trivandrum would host an **International Conference on REPROMICS - OMICS IN REPRODUCTION AND DEVELOPMENT (Repromics-2013)** and the **23rd Annual Meeting of the Indian Society for the Study of Reproduction & Fertility (ISSRF)** from February 7-9, 2013. The venue would be the Convention Centre of Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram.

This conference is aimed at staging advances in research and development in both basic and clinical aspects of reproduction and development in human beings and animals. We plan to cover areas including gamete development, gamete interactions, early embryo development, embryo-uterine interactions, regulation of events associated with reproduction, system failure in reproduction and clinical interventions in reproduction. This conference would also aim to take stock of the impact of two decades of "OMICS" approaches in the field of Reproduction and Development. We envisage to stage, analyze and deliberate on observations emanating from approaches involving candidate molecules, pathways and system biology.

Details regarding Repromics-2013 would be posted onto the official conference website (<http://rgcb.res.in/issrf2013.html>).

Contact Organizing Secretaries:

Dr. Pradeep Kumar G and Dr. Malini Laloraya,

Division of Molecular Reproduction,
Rajiv Gandhi Centre for Biotechnology,
Thycaud PO, Poojappura,
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**XIX SYMPOSIUM OF CZECH REPRODUCTIVE IMMUNOLOGIST
WITH
INTERNATIONAL PARTICIPATION
WILL BE HELD AT
TREST CASTLE, TREST IN THE CZECH REPUBLIC
ON
MAY 23-25, 2013**

For more information please contact –

Ms. Zdenka Ulcova Gallova ,
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For information and application forms, please contact Sophia Virani or Andrew Edwards
at placenta@queensu.ca or <http://www.queensu.ca/workshops/placenta/>



2013 Annual Human Placenta Workshop

Queen's University, Kingston, Ontario



When: **July 14 – 19, 2013** followed by a Special Pre-SSR Symposium July 20, 2013

Where: **Queen's University** Campus, Kingston, Ontario, Canada

*These dates will enable trainees to also attend the
Society for the Study of Reproduction's (SSR) 46th Annual Meeting (July 22-26, 2013)
in Montreal, a convenient train trip from Kingston*

Participants will engage in a full schedule of lectures and laboratory activities on the human placenta guided by the expert, international faculty who are joining us this year. Feedback from this workshop has been overwhelmingly positive. Participants are astounded by how much they learn in this focused, small group environment.

Apply (deadline April 1, 2013) to be one of the 12 trainees to join us in beautiful Kingston, Ontario!

Cost (\$1995 CAD) includes all accommodation, meals and social events.

Direct application inquires to: placenta@queensu.ca

Course Director

Dr. Chandra Tayade

Consultant

Dr. Anne Croy

Tier 1 Canada Research Chair

Course Coordinators

Andrew Edwards and Sophia Virani

Department of Biomedical and Molecular
Sciences

Queen's University

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Workshop Faculty

Dr. J. Aplin, University of Manchester
Dr. T. Childs, Kingston General Hospital
Dr. B.A. Croy, Queen's University
Dr. C. Dunk, Samuel Lunenfeld RI
Dr. W. Foster, McMaster University
Dr. C. Fusch, McMaster University
Dr. C. Graham, Queen's University
Dr. A. Gruslin, University of Ottawa
Dr. S. Murphy, University of Rochester
Dr. J. Reynolds, Queen's University
Dr. G.N. Smith, Queen's University
Dr. C. Tayade, Queen's University

Lecture & Wet Laboratory Topics Include

- Gross Anatomy of Human Placenta
- Laser Capture Microdissection
- Functional Assays
- Clinical Correlate Lectures
- Histology and Histopathology of Human Placenta
- Isolation and Culture of Placental Cell Types
- Gene Expression Assays
- Genetic Analysis of Placenta

Graduate students, post-doctoral fellows and career
investigators are encouraged to apply



SLIMP - LASRI 2013

On behalf of the Organizing Committee we are pleased to announce the joint meeting of 5th Latin American Symposium on Maternal Fetal Interaction and Placenta (**SLIMP 2013**) and 4th Latin American Symposium on Reproductive Immunology (**LASRI 2013**) that will be held on **February 18-20 2013, in Iguaçu Falls, Brazil.**

This is 10th Anniversary of SLIMP and we intend to keep up the tradition of this meeting, bringing clinicians, scientists and industry to the breakthroughs and frontiers knowledge on maternal fetal interaction and reproductive immunology research. A pre-meeting 2 days workshop on *“Cellular and non-cellular components orchestrating and coordinating the maternal-fetal interface: basic science and clinically relevant aspects of pregnancy”*, will be the extended activity of this meeting to be held in Sao Paulo city, SP.

Take note of the date and we warmly invite you to attend this SLIMP-LASRI joint meeting and share your bench and/or clinical experience on reproductive science by submitting your abstract. **The deadline for submitting abstracts is October 15th, 2012.**

For more details on our scientific program, the meeting venue and useful information on the beautiful city of Iguaçu Falls and surroundings:

Please consult our website at www.slimp.org.

Or, contact through the E-mail: slimp.lasri2013@gmail.com

We look forward to seeing you in Iguaçu Falls!

SLIMP-LASRI Organizing Committee

13th INTERNATIONAL SYMPOSIUM FOR IMMUNOLOGY OF REPRODUCTION

“From the roots to the tops of reproductive immunology”

22-24 June 2012, “Fr.Joliot-Curie”

International house of scientists

Varna, Bulgaria

Organized under ReProForce FP7 Project
by the International Coordination Committee for Immunology of Reproduction (ICCIR) and
the Institute of Biology and Immunology of Reproduction “Acad. K. Bratanov”, Bulgarian
Academy of Sciences (IBIR-BAS).

The ICCIR and the Varna Symposia

Dear colleagues and friends,

Continuing the tradition of the all previous twelve Symposia, the 13th International Symposium for Immunology of Reproduction took place at the “Fr.Joliot-Curie” International house of scientists (IHS) in Varna, Bulgaria. This tradition is based on the recognition of IHS as a place where in 1967 the **First International Symposium on Immunology of Spermatozoa and Fertilization** was held and the **ICCIR was founded**. Prof. Bratanov was elected as its first president. Later on, in 1975, during the 3th International Symposium for Immunology of Reproduction in Varna, the International Society for Immunology of Reproduction (ISIR) was founded and Prof. Bratanov was its first President.



Group photograph at the International Symposium

The 13th International Symposium for Immunology of Reproduction was **attended by 135** researchers and specialists in the field of reproductive biology and immunology from **18 countries** namely Bulgaria, Germany, Poland, Austria, Italy, Czech Republic, Netherlands, Hungary, France, Greece, Russia, UK, Japan, US, China, Egypt, India, Ukraine. The Symposium was opened by Prof. Rayna Georgieva, President of ICCIR as well as of the Symposium Organizing Committee and Leader of the WP3 of the ReProForce Project. The participants were honoured by the cordial greeting speeches of Prof. Guy-Andre Voisin (France), doyen of the Symposium and co-founder of ICCIR, Prof. Dimitrina Kacheva, Director of IBIR-BAS and Assoc. Prof. Margarita Mollova, Coordinator of the ReProForce Project. Special congratulation to the Symposium was sent by the President of Bulgarian Academy of Sciences.



Guests attending the lecture

Scientific activities

The scientific programme of the Symposium was organized in the form of plenary lectures by invited speakers, short oral presentation and poster sessions. During 3 days **33** plenary lectures, **5** short oral presentations and **72** posters in 3 sessions were presented. Plenary lectures were presented by world-renowned scientists in the field of reproductive immunology: D. Clark (Canada), C. Coulam (USA), I. Sargent (UK), N. Fernandez (UK), E. Barnea (USA), J. Szekeres-Bartho (Hungary), U. Markert (Germany), K. Teerds (Netherlands), S. Komori (Japan), H. Donat (Germany), S. Gupta (India), M. Kurpisz (Poland), Q.Y. Sun (China), A. Croy (USA), J. Peknicova Z. и Ulcova-Gallova (Czech Republic), Ph. Bouteiller (France), Y. Shoenfeld (Egypt) and others.

The basic and clinical data presented at the symposium were on the next general problems of the reproductive immunology: Gametes antigenicity and gametes interactions; Innate and adoptive immune mechanisms in reproduction; Immuno-endocrine interactions in reproduction; Mechanisms of immune regulation in implantation and pregnancy; Cytokines in implantation and pregnancy; immunological problems of infertility; Pregnancy loss and implantation failures; stem cells and reproduction and others. Two lectures were presented by BIO-RAD and ELTA 90, sponsors of the symposium, including new industrial products capable of enhancing the capacity of scientific and clinical research in reproductive immunology. Numerous young scientists reported their results in 72 poster presentations, discussed in three scientific sessions. After peer reviewing, all Symposium materials were published in special online issue of the American Journal of Reproductive Immunology **67** (Suppl.1) 2012, 1-62. Prof. Rayna Georgieva

presented her booklet, prepared especially for the symposium in English and Bulgarian, **"History of Reproductive Immunology and the Contribution of Bulgaria."** It was shown that the booklet contains information on: How reproductive immunology evolved, early development and basic studies; The beginning, background and achievements of *in vitro* fertilization and embryo transfer (IVF-ET) in humans and animals; Important events that have contributed to the creation and development of reproductive immunology; Attitude of the leading scientists of the Bulgarian Contribution to creation of reproductive immunology. Copies of the booklet were provided to the participants.

On June 23rd, the **ReProForce Working meeting** was held with the participation of the project coordinator, scientific experts, WP leaders, representatives of the ReProForce supporting partners, experts - evaluators of the project and others. The meeting was chaired by coordinator; Assoc. Prof. Margarita Mollova who introduced the experts of the project evaluated by European Commission and thanked them that they accepted the invitation to attend the 13th Symposium in Varna. ReProForce experts Prof. Vidjei Pandey and Prof. Mareus Sperandio presented their research field and evaluation experience. ReProForce project supporting partners presented their views and discussions on future scientific strategy of IBIR. Information on these issues by the following representatives of the partner organizations was presented: Prof. K. Teerds (Human and Animal Physiology Group, Department of Animal Sciences, Wageningen University, Wageningen, Netherlands); Prof. N. Fernandez (University of Essex, UK); Prof. H. Donat (Private Hospital for Gynaecology, Magdeburg, Germany); Dr. C. Mayhofer (Biotechnology in Reproduction, Clinical Department of Reproduction and Animal breeding, Vienna, Austria)

The evening of June 24th was dedicated to the Official Ceremony on: Awarding the **"Kiril Bratanov" medal and the Certificate** for contribution to the advancement of Reproductive Immunology and to ICCIR activities.



The award was received by the following researchers: Prof. David Clark (Canada), Prof. Ian Sargent (UK), Prof. Eytan Barnea (US), Prof. Nelson Fernandez (UK), Prof. Raina Fichorova (Bulgaria, US).

The **Special Honorary Award and Certificate** for their organizational and scientific activity and significant contribution in the field of Reproductive Immunology received the following well

known scientists: Prof. G A Voisin (France), Prof. C. Coulam (US), Prof. I. Kehayov (BG).



With **Special Award** Prof. Rayna Georgieva was honored by the Leaders of IBIR-BAS for her scientific contributions in the field of reproductive immunology, for her efforts to develop and expand activities of ICCIR, for the organization of six International Symposia on Immunology of Reproduction and the expansion of the International Relationship of the Institute.



During the last scientific session of the Symposium (June 24), the best posters of young scientists were awarded with the **Special Award "Professor Hans Donat" and Certificate**. Thanks to Prof. Hans Donat who is active member of the ICCIR and gave Special "Prof. Hans Donat" award to the 6 best posters of young, up to 40 years, researchers presented at the 13th Symposium. The six persons, nominated by a scientific jury received this Award and Certificate: I. Vangelov (Bulgaria), M. Weber (Germany), T. Shima (Japan), E. Stoyanova (Bulgaria), N. Ajvazova (Bulgaria), and N. Manolova (Bulgaria)

Conclusion

The 13th International Symposium for Immunology of Reproduction was another proof of the importance of the scientific investigations in the field of biology and immunology of reproduction in humans and animals and their role in the world basic science and clinical practice. The Symposium is the largest scientific event included in the program of ReProForce FP7 project. The Symposium created an opportunity for broad international contacts with scientists from 18 countries, including scientists from 10 European countries and representatives of supporting partner organizations of ReProForce, for broad exchange of latest scientific research, the possibility for creation of new scientific collaborations and increases the visibility of IBIR-BAS and reproductive immunology in world scientific community.

Contributed by:

Prof. Rayna Georgieva

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OBITUARY

I regret to inform you that **Dr Shinji Komori** passed away from the illness of a cancer at the age of 56, at 7:25 pm of June 21, 2012, at the hospital of the Hyogo College of Medicine, Nishinomiya, Japan. He left behind his dearest wife and three grown-up children.

He was born in Osaka in 1956 and grown-up there. Immediately after the graduation from the Tokushima University School of Medicine in 1982, he entered the Department of Obstetrics and Gynecology of the Hyogo College of Medicine and was promoted there to the Lecturer in 1994, to the Associate Professor in 2007 and to the Chairman and Professor in 2009. In 2010, he was elected as a Council Member of the ISIR. His research interest was Reproductive Endocrinology and Gamete Immunology.

Sincerely yours

Koji Koyama

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