

**Day 1** 13:35-15:05, Nov. 14 (Thu) / Poster Room

● **Poster Session**

**Chairs/Evaluators**

Group 1	Yasushi Kawano, John Schjenken
Group 2	Gülsah Gabriel, Akitoshi Nakashima
Group 3	Laszlo Szereday, Osamu Yoshino
Group 4	Takayuki Iriyama, Takeshi Nagamatsu
Group 5	Yasuyuki Negishi, Naoto Takahashi
Group 6	Marta Rodriguez Garcia, Keiichi Kumasawa
Group 7	Anke Diemert, Hideto Yamada
Group 8	Koji Aoki, Rodolfo R. Favaro
Group 9	Shihoko Aizawa, Vilmos Fülöp
Group 10	Atsushi Fukui, Kristin Thiele
Group 11	Hidetaka Katabuchi, Mickey Patel

**Group 1** P-001

**Salicornia herbacea aqueous extracts inhibit IL-1 $\beta$  production by regulating NLRP3 inflammasome activation in macrophages and human-derived placental cells**

Jun-Young Lee<sup>1</sup>, Eui-Jeong Noh<sup>1</sup>, Jae Won Han<sup>1</sup>, Myeong Seoung Kwon<sup>1</sup>, Sung Ki Lee<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, College of Medicine, Konyang University, Daejeon, Republic of Korea

**Group 1** P-002

**Activation of Tim-3/Gal-9 signaling pathway can alleviate the LPS-induced preeclampsia-like manifestations in rats by promoting decidual macrophage polarization to M2 subtype**

Li-Ling Wang<sup>1</sup>, Zhi-Hui Li<sup>1</sup>, Gil Mor<sup>2</sup>, Ai-Hua Liao<sup>1</sup>

<sup>1</sup>Institute of Reproductive Health, Center for Reproductive Medicine, Tongji Medical

College, Huazhong University of Science and Technology

<sup>2</sup>C.S. Mott Center for Human Growth and Development, Wayne State University School of Medicine, Detroit, MI, USA

**Group 1** P-003

**Over expression of ATG4B is a new cause of autophagy insufficiency that leads to preeclampsia with fetal growth restriction**

Tae Kusabiraki<sup>1</sup>, Akitoshi Nakashima<sup>1</sup>, Aiko Aoki<sup>1</sup>, Shigeru Saito<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, University of Toyama

**Group 1** P-004

**A Novel Allosteric Modulator of IL-6R Successfully Prevents Deleterious Effects of Inflammation in a LPS Model of Preterm Birth**

Elizabeth Prairie<sup>1,2</sup>, Sarah-Eve Loiselle<sup>1,2</sup>, Xin Hou<sup>1</sup>, Estafania Marin Sierra<sup>1</sup>, Christiane Quiniou<sup>1</sup>, Sarah Robertson<sup>3</sup>, David Olson<sup>4</sup>, Sylvain Chemtob<sup>1,2</sup>

<sup>1</sup>CHU Sainte-Justine Research Center, Montreal, Canada

<sup>2</sup>University of Montreal, Montreal, Canada

<sup>3</sup>University of Adelaide, Australia

<sup>4</sup>University of Alberta, Edmonton, Canada

**Group 1** P-005

**The status of anti-angiogenesis in the internal uterine os in patients with placenta previa**

Michiko Yamashita<sup>1</sup>, Keiichi Kumasawa<sup>1,2</sup>, Hitomi Nakamura<sup>1</sup>, Tadashi Kimura<sup>1</sup>

<sup>1</sup>Obstetrics and Gynecology, Osaka University, Osaka, Japan

<sup>2</sup>Obstetrics and Gynecology, University of Tokyo, Tokyo, Japan

**Group 1 P-006****Human chorionic gonadotropin targets pregnancy-destructive Th17 cells to alter their phenotype and functionality promoting fetal protection in mice**

Lea Lentz<sup>1</sup>, Annika Stutz<sup>1</sup>, Ana C. Zenclussen<sup>1</sup>, Anne Schumacher<sup>1</sup>

<sup>1</sup>Experimental Obstetrics and Gynecology, Medical Faculty, Otto-von-Guericke University, Magdeburg, Germany

**Group 1 P-007****Immunological mechanism of mifepristone in mice artificial abortion**

Yanhong Li<sup>1</sup>, Yifei Sang<sup>1</sup>, Yunhui Tang<sup>1</sup>, Ji Zheng<sup>1</sup>, Ling Xu<sup>1</sup>, Dajing Li<sup>1</sup>, Meirong Du<sup>1</sup>

<sup>1</sup>The Obstetrics & Gynecology Hospital of Fudan University, Shanghai, China

**Group 1 P-008****Cytokines of the IL-36 system: novel regulators of trophoblastic functions**

Jose M. Murrieta-Coxca<sup>1,2</sup>, Ruby N. Gutiérrez-Samudio<sup>1</sup>, Sandra Rodríguez-Martínez<sup>2</sup>, Mario E. Cancino-Díaz<sup>2</sup>, Rodolfo Favaro R.<sup>1</sup>, Udo R. Markert<sup>1</sup>, Diana M. Morales-Prieto<sup>1</sup>

<sup>1</sup>Placenta Lab. Department of Obstetrics. University Hospital Jena. Jena, Germany.

<sup>2</sup>Departamento de Inmunología, Instituto Politécnico Nacional, Escuela Nacional de Ciencias Biológicas, Mexico City, Mexico.

**Group 1 P-009****Elucidation of Neutrophil Extracellular Trap Proteins Responsible for HIV Inactivation in the Female Genital Tract**

Ian S. LaCroix<sup>1</sup>, Fiona D. Barr<sup>3</sup>, Mark Adamo<sup>1</sup>, Charles R. Wira<sup>3</sup>, Scott Gerber<sup>1</sup>, Marta Rodríguez-García<sup>2</sup>

<sup>1</sup>Geisel School of Medicine at Dartmouth, Lebanon, NH, USA.

<sup>2</sup>Department of Immunology, Tufts University School of Medicine, Boston, MA, USA

<sup>3</sup>Department of Microbiology and Immunology, Geisel School of Medicine at Dartmouth, Lebanon, NH, USA.

**Group 1** P-010

**Maternal Hepatitis B Virus Infection Modulated Immune Cells Profiles in Endometrium from Women with Reproductive Failure**

Longfei LI<sup>1,2</sup>, Linlin WANG<sup>1</sup>, Lianghui DIAO<sup>1</sup>, Chunyu HUANG<sup>1</sup>, Yong ZENG<sup>1</sup>

<sup>1</sup>Shenzhen Key Laboratory of Reproductive Immunology for Peri-implantation, Fertility Center, Shenzhen Zhongshan Urology Hospital, Shenzhen, PR China

<sup>2</sup>Laboratory of Molecular Pharmacology, Department of Pharmacology, School of Pharmacy, Southwest Medical University, Luzhou, PR China

**Group 1** P-011

**Suppression of syncytialization by human cytomegalovirus infection**

Nobuko Mimura<sup>1</sup>, Takeshi Nagamatsu<sup>1</sup>, Kazuki Morita<sup>1</sup>, Ayumi Taguchi<sup>1</sup>, Keiichi Kumasawa<sup>1</sup>, Takayuki Iriyama<sup>1</sup>, Yutaka Osuga<sup>1</sup>, Tomoyuki Fujii<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, The University of Tokyo, Tokyo, Japan

**Group 2** P-012

**The effects of *Lactobacillus crispatus*, *Gardnerella vaginalis*, and *Prevotella bivia* on the re-epithelialization of MS74 vaginal epithelial cell line**

Kazuhide Takada<sup>1</sup>, Shihoko Komine-Aizawa<sup>1</sup>, Quang D Trinh<sup>1</sup>, Satoshi Hayakawa<sup>1</sup>

<sup>1</sup>Division of Microbiology, Department of Pathology and Microbiology, Nihon University School of Medicine, Tokyo, Japan

**Group 2 P-013**

**Activation of Rev-erb $\alpha$  attenuates Lipopolysaccharide-induced inflammatory reactions in human endometrial stromal cells via suppressing TLR4-mediated NF-kappaB activation**

Liyuan Cui<sup>1,2</sup>, Weijie Zhao<sup>1,2</sup>, Xixi Huang<sup>1,2</sup>, Songcun Wang<sup>1,2</sup>, Meirong Du<sup>1,2</sup>

<sup>1</sup>Hospital of Obstetrics and Gynecology, Fudan University Shanghai Medical College, Shanghai, China

<sup>2</sup>Shanghai Key Laboratory of Female Reproductive Endocrine Related Diseases, Shanghai, China

**Group 2 P-014**

**Withdrawn**

**Group 2 P-015**

**Hormonal Regulation of miRNA Expression in CD4+T cells from the Human Female Reproductive Tract**

Mickey Patel<sup>1</sup>, Zheng Shen<sup>1</sup>, Charles R. Wira<sup>1</sup>

<sup>1</sup>Department of Microbiology and Immunology, Geisel School of Medicine at Dartmouth, Lebanon, NH, USA

**Group 2 P-016**

**In vivo and genomic characterization of Ureaplasma species isolated from women with intra-amniotic infection**

Kenichiro Motomura<sup>1,2</sup>, Roberto Romero<sup>1,2</sup>, Andrew Winters<sup>1,2</sup>, Yi Xu<sup>1,2</sup>, Chaur-Dong Hsu<sup>1,2</sup>, Kevin Theis<sup>1,2</sup>, Nardhy Gomez-Lopez<sup>1,2</sup>

<sup>1</sup>Perinatology Research Branch, NICHD/NIH/DHHS, Bethesda, MD, and Detroit, MI, USA

<sup>2</sup>Wayne State University School of Medicine, Detroit, MI, USA

**Group 2** P-017

**BCG vaccination in the babyhood of the women influences their placenobiome during pregnancy: colonization of early pregnancy placenta with mycobacterial L forms**

Tanya Dimova<sup>1</sup>, Violeta Dimitrova<sup>2</sup>, Petar Grozdanov<sup>3</sup>, Nadya Markova<sup>3</sup>

<sup>1</sup>Institute of Biology and Immunology of Reproduction "K. Bratanov", Bulgarian Academy of Sciences, Sofia, Bulgaria

<sup>2</sup>Medical University, University Obstetrics and Gynecology Hospital "Maichin Dom", Sofia, Bulgaria

<sup>3</sup>Institute of Microbiology "St. Angelov", Bulgarian Academy of Sciences, Sofia, Bulgaria

**Group 2** P-018

**A case of congenital cytomegalovirus infection via a re-infected mother with original antigenic sin**

Kuniaki Toriyabe<sup>1</sup>, Tetsuo Koshizuka<sup>2</sup>, Miki Hagimoto<sup>1</sup>, Asa Kitamura<sup>1</sup>, Kyoko Shimada<sup>1</sup>, Tomoaki Ikeda<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Mie University Graduate School of Medicine, Mie, Japan.

<sup>2</sup>Department of Microbiology and Immunology, Gifu Pharmaceutical University, Gifu, Japan

**Group 2** P-019

**The distribution of macrophages, and the expression Ia antigen and acid phosphatase in the uterus of mice during the preimplantation period**

Shuichi Iida

Pref. Art Museum Ladies Mental Clinic

**Group 2** P-020

**Gestational microbiome and antimicrobial immunity**

Donghui Huang<sup>1</sup>, Chunlei Mei<sup>1</sup>

<sup>1</sup>Institute of Reproductive Health, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China

**Group 2** P-021

**G-CSF suppresses proliferation of human uterine endometrial carcinoma cells**

Yayoi Fukuda<sup>3</sup>, Hitomi Nakamura<sup>1</sup>, Keiichi Kumasawa<sup>2</sup>, Tadashi Kimura<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Osaka University Graduate School of Medicine, Osaka, Japan

<sup>2</sup>Department of Obstetrics and Gynecology, Faculty of Medicine, University of Tokyo, Tokyo, Japan

<sup>3</sup>Department of Obstetrics and Gynecology, Osaka police hospital, Osaka, Japan

**Group 2** P-022

**Tendril of Cucurbita moschata extract suppresses NLRP3 inflammasome activation in macrophages and human trophoblast cells**

Ji-Yeon Park<sup>1</sup>, Sung-Gang Jo<sup>1</sup>, Joo-Hee Choi<sup>1</sup>, Sung-Ki Lee<sup>2</sup>, Jong-Hwan Park<sup>1</sup>

<sup>1</sup>Laboratory Animal Medicine, College of Veterinary Medicine and BK 21 PLUS Project Team, Chonnam National University, Gwangju, Korea

<sup>2</sup>Department of Obstetrics and Gynecology, Myunggok Medical Research Institute,

Konyang University Hospital, Daejeon, Korea

**Group 3 P-023**

**MicroRNAs in the cancer-associated fibroblast that cocultured with cancer cell.**

Takuya Murata<sup>1</sup>, Yukiko Hazama<sup>1</sup>, Koichiro Shimoya<sup>1</sup>

<sup>1</sup>Kawasaki Medical School

**Group 3 P-024**

**Withdrawn**

**Group 3 P-025**

**The impact of Botulinum Toxin A (BoTA) treatment on endometrial blood flow**

Hwa Seon Koo<sup>1</sup>, YOUN-JUNG KANG<sup>2</sup>, CHANG-JIN LEE<sup>2</sup>, MIN-JEE YOUN<sup>2</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, CHA Bundang Medical Center, CHA university

<sup>2</sup>Department of Biochemistry, School of Medicine, CHA University

**Group 3 P-026**

**Sulforaphane prevents oxidative stress-induced trophoblast cell death by increasing HO-1 expression**

Gunho Won<sup>1</sup>, Ho-won Kim<sup>1</sup>, Jong-seok Kim<sup>1</sup>

<sup>1</sup>Myunggok Medical Research Institute, College of Medicine, Konyang University.

**Group 3 P-027**

**Effects of endometriosis on fertility and pregnancy outcome in mouse model**



Mohammed Elsherbini<sup>1</sup>, Kaori Koga<sup>1</sup>, Eiko Maki<sup>1</sup>, Erina Satake<sup>1</sup>, Arisa Takeuchi<sup>1</sup>, Keiichi Kumasawa<sup>1</sup>, Yasushi Hirota<sup>1</sup>, Tomoyuki Fjii<sup>1</sup>, Yutaka Osuga<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, University of Tokyo, Tokyo, Japan

**Group 3** P-028

**Crosstalk between adipocyte differentiation and immunoregulation compensates for osteopenic phenotype in mice with loss-of-function mutation in Lrp5**

Lisha Li<sup>1</sup>, Xuemin Qiu<sup>1</sup>, Yan Sun<sup>1</sup>, Na Zhang<sup>1</sup>, Ling Wang<sup>1</sup>

<sup>1</sup>Obstetrics and Gynecology Hospital of Fudan University, Shanghai, China

**Group 3** P-029

**IL-2 and IL-27 synergistically triggers Th2 bias in endometriosis**

Xuemin Qiu<sup>1</sup>, Kai-Kai Chang<sup>1</sup>, Wen-Jie Zhou<sup>2</sup>, Da-Jin Li<sup>1</sup>, Ming-Qing Li<sup>1</sup>

<sup>1</sup>Laboratory for Reproductive Immunology, Hospital of Obstetrics and Gynecology, Fudan University, Shanghai 200011, China

<sup>2</sup>Clinical and Translational Research Center, Shanghai First Maternity and Infant Hospital, Tongji University School of Medicine, Shanghai 200040, China

**Group 3** P-030

**Ureaplasma urealyticum infection contributes to the development of pelvic endometriosis**

Eui Jeong Noh<sup>1</sup>, Jong-Seok Kim<sup>1</sup>, Chul Jung Kim<sup>1</sup>, Sung Ki Lee<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynaecology, College of Medicine, Konyang University, Daejeon, Republic of Korea

**Group 3 P-031****Elevated heme impairs macrophage phagocytosis in endometriosis**

Yu-Yin Liu<sup>1</sup>, Yu-Kai Liu<sup>1</sup>, Wen-Ting Hu<sup>1</sup>, Ling-Li Tang<sup>1</sup>, Yan-Ran Sheng<sup>1</sup>, Chun-Yan Wei<sup>1</sup>, Ming-Qing Li<sup>1</sup>, Xiao-Yong Zhu<sup>1</sup>

<sup>1</sup>Laboratory for Reproductive Immunology, Hospital of Obstetrics and Gynecology, Fudan University, Shanghai, People's Republic of China

**Group 3 P-032****Relationship between NCR expression on NK cells and natural pregnancies after surgical treatment for severe endometriosis**

Ayano Yamaya<sup>1,2</sup>, Atsushi Fukui<sup>3</sup>, Ayako Taima<sup>1</sup>, Megumi Yokota<sup>1</sup>, Rie Fukuhara<sup>1</sup>, Yoshihito Yokoyama<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Hirosaki University Graduate School of Medicine, Hirosaki, Aomori, Japan

<sup>2</sup>Department of Obstetrics and Gynecology, Odate Municipal General Hospital, Odate, Akita, Japan

<sup>3</sup>Department of Obstetrics and Gynecology, Hyogo College of Medicine, Nishinomiya, Hyogo, Japan

**Group 3 P-033****Distribution and phenotypes of macrophages in ovarian endometriotic cysts**

Maki Kusunoki<sup>1,2</sup>, Yukio Fujiwara<sup>2</sup>, Hikaru Sakamoto<sup>3</sup>, Takuto Tsuru<sup>3</sup>, Yuko Imamura<sup>1</sup>, Ritsuo Honda<sup>1</sup>, Takashi Ohba<sup>1</sup>, Yoshihiro Komohara<sup>2</sup>, Hidetaka Katabuchi<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Graduate School of Medical Sciences, Faculty of Life Sciences, Kumamoto University

<sup>2</sup>Department of Cell Pathology, Graduate School of Medical Sciences, Faculty of Life Sciences, Kumamoto University

<sup>3</sup>School of Medicine, Kumamoto University

**Group 4 P-034****Indoleamine-2,3-dioxygenase in endometriosis**

Huili Yang<sup>1</sup>, Mingqing Li<sup>1</sup>

<sup>1</sup>Hospital of Obstetrics and Gynecology, Fudan University, Shanghai, China

**Group 4 P-035****Vitamin D modulates inflammatory responses in peritoneal mononuclear cells of endometriosis patients**

Erina Satake<sup>1</sup>, Kaori Koga<sup>1</sup>, Ayumi Taguchi<sup>1</sup>, Masashi Takamura<sup>2</sup>, Miyuki Harada<sup>1</sup>, Tetsuya Hirata<sup>1</sup>, Yasushi Hirota<sup>1</sup>, Osamu Wada-Hiraike<sup>1</sup>, Yutaka Osuga<sup>1</sup>, Tomoyuki Fujii<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, The University of Tokyo, Tokyo, Japan

<sup>2</sup>Department of Obstetrics and Gynecology, Saitama Medical University, Saitama, Japan

**Group 4 P-036****Inflammation of retroperitoneal adipose tissue adjacent to pelvic endometriosis**

Kotaro Kubo<sup>1</sup>, Yasuhiko Kamada<sup>1</sup>, Chiaki Kashino<sup>1</sup>, Toru Hasegawa<sup>1</sup>, Ai Sakamoto<sup>1</sup>, Mikiya Nakatsuka<sup>2</sup>, Takashi Matsumoto<sup>3</sup>, Hisashi Masuyama<sup>1</sup>

<sup>1</sup>Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama, Japan

<sup>2</sup>Graduate School of Health Sciences, Okayama University, Okayama, Japan

<sup>3</sup>Kenporen Osaka central Hospital, Osaka, Japan

**Group 4 P-037****Insight of anti-inflammatory cytokines in endometriosis**

Ming-Qing Li

Hospital of Obstetrics and Gynecology, Fudan University

**Group 4 P-038**

**Evaluation of immune and inflammatory gene panel for recurrent implantation failure patients undergoing IVF**

Amruta D.S Pathare<sup>1</sup>, Indira Hinduja<sup>1</sup>

<sup>1</sup>Department of IVF and Research, P.D. Hinduja Hospital and Medical Research Centre

<sup>2</sup>N.A 3N.A 4N.A 5N.A

**Group 4 P-039**

**Intravenous Immunoglobulin and Intralipid treatment neutralizes the negative effect of elevated NK cytotoxicity in IVF**

Boris Donskoi<sup>1</sup>, Oksana Onyshchuk<sup>2</sup>

<sup>1</sup>Institute of Pediatrics, Obstetrics and Gynecology

<sup>2</sup>Reproductive Medicine Clinic "IRM"

**Group 4 P-040**

**A distinct central memory and regulatory phenotype characterizes decidual CD8+CD122+ T regulatory cells in mice**

Lilja Hardardottir<sup>1</sup>, Alexandra M. Hierweger<sup>1,2</sup>, Mark Walkenhorst<sup>3</sup>, Anne Willing<sup>3</sup>, Kristin Thiele<sup>1</sup>, Petra C. Arck<sup>1</sup>, Maria E. Solano<sup>1</sup>

<sup>1</sup>Laboratory for Experimental Fetomaternal Medicine, Department of Obstetrics and Fetal Medicine, University Medical Center Hamburg, Hamburg, Germany.

<sup>2</sup>Institute for Immunology, Center for Diagnostics, University Medical Center Hamburg

Eppendorf, Hamburg, Germany

<sup>3</sup>Institute of Neuroimmunology and Multiple Sclerosis (INIMS), Center for Molecular Neurobiology Hamburg (ZMNH) University Medical Center Hamburg Eppendorf Hamburg Germany

**Group 4 P-041**

**Both sperm and seminal plasma have capacity to induce immature uterine CD103- and CD103+ DCs before implantation**

Ippei Yasuda<sup>1,2</sup>, Ryoyo Ikebuchi<sup>2,3</sup>, Mizuki Ueda<sup>2</sup>, Taiki Moriya<sup>2</sup>, Yutaka Kusumoto<sup>2</sup>, Akemi Ushijima<sup>1</sup>, Tomoko Shima<sup>1</sup>, Akitoshi Nakashima<sup>1</sup>, Shigeru Saito<sup>1</sup>, Michio Tomura<sup>2</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Faculty of Medicine, University of Toyama, Toyama, Japan

<sup>2</sup>Laboratory of Immunology, Faculty of Pharmacy, Osaka Ohtani University, Osaka, Japan

<sup>3</sup>Research Fellow of Japan Society for the Promotion of Science, Japan

**Group 4 P-042**

**Maternal neutrophils play an important role in placental and foetal development**

Eleanor J Ward<sup>1</sup>, Federica Marelli-Berg<sup>1</sup>, Suchita Nadkarni<sup>1</sup>

<sup>1</sup>William Harvey Research Institute, Queen Mary University of London

**Group 4 P-043**

**Specific deletion of the glucocorticoid receptor on dendritic cells (DCs) in mice improves maternal immune adaption to pregnancy and fetal development via preferential acquisition of a tolerogenic phenotype in the uterine DCs**

Lianghui Diao<sup>1,2</sup>, Agnes Wieczorek<sup>1</sup>, Yong Zeng<sup>2</sup>, Petra Arck<sup>1</sup>, Kristin Thiele<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Fetal Medicine, Laboratory for Experimental Feto-Maternal Medicine, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

<sup>2</sup>Shenzhen Key Laboratory for Reproductive Immunology of Peri-implantation; Shenzhen Zhongshan Institute for Reproduction and Genetics; Shenzhen Zhongshan Urology Hospital, Shenzhen, China

**Group 4 P-044**

**Using high frequency ultrasound to define the time point of intrauterine growth retardation in a mouse model of heme oxygenase-1 deficiency**

Stefanie Langwisch<sup>1</sup>, Nicole Meyer<sup>1</sup>, Markus Scharm<sup>1</sup>, Ana C. Zenclussen<sup>1</sup>

<sup>1</sup>Experimental Obstetrics and Gynecology, Medical Faculty, Otto-von-Guericke University, Magdeburg, Germany

**Group 5 P-045**

**M2 Macrophage plays an essential role for successful implantation via regulating uterine endometrial proliferation differentiation switching (PDS)**

Yosuke Ono<sup>1,4</sup>, Osamu Yoshino<sup>2</sup>, Masami Ito<sup>1</sup>, Tomoko Shima<sup>1</sup>, Akitoshi Nakashima<sup>1</sup>, Yasushi Hirota<sup>3</sup>, Shinichiro Wada<sup>4</sup>, Takafumi Fujino<sup>4</sup>, Yutaka Osuga<sup>3</sup>, Shigeru Saito<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Faculty of Medicine, University of Toyama, Japan

<sup>2</sup>Department of Obstetrics and Gynecology, Kitasato University School Medicine, Japan

<sup>3</sup>Department of Obstetrics and Gynecology, Faculty of Medicine, University of Tokyo, Japan

<sup>4</sup>Department of Obstetrics and Gynecology, Teine Keijinkai Hospital, Japan

**Group 5 P-046**

**Fetal sex influences maternal immune system dynamics over the course of pregnancy**

Ina A. Stelzer<sup>1</sup>, Martin G. Becker<sup>1</sup>, Xiaoyuan Han<sup>1</sup>, Edward Ganio<sup>1</sup>, Eileen S. Tsai<sup>1</sup>, Laura Peterson<sup>2</sup>, Gary M. Shaw<sup>2</sup>, David K. Stevenson<sup>2</sup>, Martin S. Angst<sup>1</sup>, Nima Aghaeepour<sup>1</sup>, Brice Gaudilliere<sup>1</sup>

<sup>1</sup>Department of Anesthesiology, Perioperative and Pain Medicine, School of Medicine, Stanford University, Palo Alto, CA, United States

<sup>2</sup>Department of Pediatrics and March of Dimes Prematurity Research Center, School of Medicine, Stanford University, Palo Alto, CA, United States

**Group 5 P-047**

**Exosome derived from decidual stroma cells regulates the phenotype and cytotoxicity of NK cells**

Shaoliang Yang<sup>1</sup>, Haiyan Wang<sup>1,4</sup>, Dajin Li<sup>2,4</sup>, Mingqing Li<sup>2,3,4</sup>

<sup>1</sup>Department of Gynecology of Integrated Traditional Chinese and Western Medicine, Hospital of Obstetrics and Gynecology, Fudan University, Shanghai, 200011, People's Republic of China;

<sup>2</sup>Laboratory for Reproductive Immunology, Hospital of Obstetrics and Gynecology, Fudan University, Shanghai, 200011, People's Republic of China

<sup>3</sup>Key Laboratory of Reproduction Regulation of NPFPC, SIPPR, IRD, Fudan University, Shanghai 200032, People's Republic of China

<sup>4</sup>Shanghai Key Laboratory of Female Reproductive Endocrine Related Diseases, Shanghai, 200011, People's Republic of China.

**Group 5 P-048**

**Sigma Receptor 1 Regulates T cells by PD-L1 at the Maternal-fetal Interface in Early Pregnancy**

Shiwen Li<sup>1</sup>, Yi Zhang<sup>1</sup>, Jinquan Cui<sup>1</sup>

<sup>1</sup>The second affiliated hospital of zhengzhou university

**Group 5 P-049**

**Gamma/delta T cells display decidual specific phenotype but diverse TCR repertoire during human early pregnancy**

Antonia Terzieva<sup>1</sup>, Violeta Dimitrova<sup>2</sup>, Lyubomir Djerov<sup>2</sup>, Silvina Zapryanova<sup>1</sup>, Petia Dimitrova<sup>3</sup>, Ivaylo Vangelov<sup>1</sup>, Tanya Dimova<sup>1</sup>

<sup>1</sup>Institute of Biology and Immunology of Reproduction "K. Bratanov", Bulgarian Academy of Sciences, Sofia, Bulgaria

<sup>2</sup>Medical University, University Obstetrics and Gynecology Hospital "Maichin Dom", Sofia, Bulgaria

<sup>3</sup>Institute of Microbiology "St. Angelov", Bulgarian Academy of Sciences, Sofia, Bulgaria

**Group 5 P-050**

**Decidual stromal cells promote the renewal of decidual macrophages by secreting IL-24 in early pregnancy**

Jun Shao<sup>1</sup>

<sup>1</sup>Hospital of Obstetrics and Gynecology, Fudan University

**Group 5 P-051**

**The production and role of high-mobility group A1 protein on extravillous trophoblast**

Yuka Uchikura<sup>1</sup>, Keiichi Matsubara<sup>1</sup>, Yuko Matsubara<sup>1</sup>, Kazuko Takagi<sup>1</sup>, Takashi Sugiyama<sup>1</sup>

<sup>1</sup>Ehime university hospital, Ehime, Japan

**Group 5 P-052**



### **Importance of sialylation and sulfation change in the uterine glycocalyx to prepare for implantation**

Hitomi Nakamura<sup>1</sup>, Takayoshi Hosono<sup>2</sup>, Keiichi Kumasawa<sup>1,3</sup>, Carolyn J.P. Jones<sup>4,5</sup>, John D. Aplin<sup>4,5</sup>, Tadashi Kimura<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynaecology, Osaka University Graduate School of Medicine, Osaka, Japan

<sup>2</sup>Graduate School of Biomedical Engineering, Osaka Electro-Communication University, Osaka, Japan

<sup>3</sup>Department of Obstetrics and Gynecology, Faculty of Medicine, University of Tokyo, Tokyo, Japan

<sup>4</sup>Maternal and Fetal Health Research Centre, Division of Developmental Biology and Medicine, School of Medical Sciences, Faculty of Biology, Medicine and Health, University of Manchester, Manchester, UK

<sup>5</sup>Maternal and Fetal Health Research Centre, St. Mary's Hospital, Central Manchester University Hospitals NHS Foundation Trust, Manchester Academic Health Sciences Centre, Manchester, UK

#### **Group 5 P-053**

### **Difference of natural cytotoxicity receptors of CD56dim and CD56bright NK cells between peripheral blood and decidua at term**

Tatsuo Yamamoto<sup>1,4</sup>, Motomi Yamazaki<sup>2</sup>, Takayuki Murase<sup>3</sup>, Fumihisa Chishima<sup>4</sup>

<sup>1</sup>Department of Obstetrics & Gynecology, Kasukabe medical center

<sup>2</sup>Department of Gastroenterology, Nihon University, School of Medicine

<sup>3</sup>Department of Obstetrics & Gynecology, National Hospital Organization Disaster Medical Center

<sup>4</sup>Department of Obstetrics & Gynecology, Nihon University, School of Medicine

#### **Group 5 P-054**

### **Maternal TLR4 impacts the female immune response at conception and contributes to normal pregnancy outcomes in the mouse**

Hon Y. Chan<sup>1</sup>, John E. Schjenken<sup>1</sup>, Sarah A. Robertson<sup>1</sup>

<sup>1</sup>Robinson Research Institute & Adelaide Medical School, University of Adelaide, SA, 5005, Australia

**Group 5 P-055**

**Progesterone effects on pregnant humoral immunity using humanized mice**

Yusuke Ohno<sup>1</sup>, Tomoka Shimizu<sup>1</sup>, Hirofumi Kashiwagi<sup>2</sup>, Yumiko Goto<sup>2</sup>, Toshiro Seki<sup>3</sup>, Ryoji Ito<sup>4</sup>, Hitoshi Ishimoto<sup>2</sup>, Yoshie Kamaetani<sup>1</sup>

<sup>1</sup>Department of Molecular Life Science, Division of Basic Medical Science, Tokai University School of Medicine, Isehara, Japan

<sup>2</sup>Department of Obstetrics and Gynecology, Division of Specialized Clinical Science, Tokai University School of Medicine, Isehara, Japan

<sup>3</sup>Department of Internal Medicine, Division of Nephrology, Endocrinology and Metabolism, Tokai University School of Medicine, Isehara, Japan

<sup>4</sup>Central Institute for Experimental Animals, Kawasaki, Japan

**Group 6 P-056**

**Blockade of CTLA-4 and Tim-3 pathways induces fetal loss with altered cytokine profiles by decidual CD4<sup>+</sup>T cells**

Songcun Wang<sup>1</sup>, chunqin chen<sup>1</sup>, fengrun sun<sup>1</sup>, mengdie li<sup>1</sup>, meirong du<sup>1</sup>

<sup>1</sup>Hospital of Obstetrics and Gynecology, Fudan University

**Group 6 P-057**

**Trophoblasts-Derived Hyaluronan Promotes the Regulatory Phenotype of Decidual Macrophages**

mengdie li<sup>1</sup>, songcun wang<sup>1</sup>, chunqin chen<sup>1</sup>, fengrun sun<sup>1</sup>, meirong du<sup>1</sup>

<sup>1</sup>Hospital of Obstetrics and Gynecology, Fudan University

**Group 6 P-058**

**SIRT1 regulates the invasive and angiogenic ability of trophoblasts**

Ki Mo Lee<sup>1</sup>, Hee Won Seo<sup>1</sup>, Ae-Ra Han<sup>2</sup>, Joon Cheol Park<sup>3</sup>, Chan Woo Park<sup>4</sup>, Sung Ki Lee<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, College of Medicine, Konyang University Myunggok Medical Research Institute, Daejeon, Republic of Korea

<sup>2</sup>Department of Obstetrics and Gynecology, Gangseo Mizmedi Hospital, Seoul, Republic of Korea

<sup>3</sup>Department of Obstetrics and Gynecology, School of Medicine, Keimyung University, Daegu, Republic of Korea <sup>4</sup>Department of Obstetrics and Gynecology, Fertility Center of CHA Gangnam Medical Center, CHA University, Seoul, Republic of Korea

**Group 6 P-059**

**In silicon analysis of mouse placenta-derived long noncoding RNAs**

Junxiao Wang<sup>1</sup>, Aya Misawa<sup>1</sup>, Shan-Shun Luo<sup>2</sup>, Toshihiro Takizawa<sup>1</sup>

<sup>1</sup>Department of Molecular Medicine and Anatomy, Nippon Medical School, Tokyo, Japan

<sup>2</sup>Department of Geriatrics, the First Hospital of Harbin Medical University, Harbin, China

**Group 6 P-060**

**Altered transcriptome profiles in placentas from complicated pregnancies in association with adverse neonatal outcomes**

Cynthia Duval<sup>1</sup>, Jacqueline Piche<sup>1</sup>, Ines Boufaied<sup>1</sup>, Maxime Caron<sup>1</sup>, Daniel Sinnett<sup>1</sup>, Sylvie Girard<sup>1</sup>

<sup>1</sup>CHU Sainte-Justine Research Center, Universite de Montreal, Montreal, Quebec, Canada

**Group 6 P-061**

**Current trends of pre-conception status, obstetric outcomes in pregnancies complicated with systemic lupus erythematosus (SLE), rheumatoid arthritis (RA) and inflammatory bowel disease (IBD) in Japan: A nationwide retrospective descriptive study.**

Sayaka Tsuda<sup>1</sup>, Azusa Sameshima<sup>1</sup>, Michikazu Sekine<sup>2</sup>, Haruna Kawaguchi<sup>3</sup>, Daisuke Fujita<sup>4</sup>, Shintaro Makino<sup>5</sup>, Shigeru Saito<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, University of Toyama, Toyama, Japan

<sup>2</sup>Department of Epidemiology and Health Policy, Graduate School of Medicine and Pharmaceutical Sciences University of Toyama, Toyama, Japan

<sup>3</sup>Department of Maternal Fetal Medicine, Osaka Women's and Children's Hospital, Osaka, Japan

<sup>4</sup>Department of Obstetrics and Gynecology, Osaka Medical College, Osaka, Japan

<sup>5</sup>Department of Obstetrics and Gynecology, Juntendo University Faculty of Medicine, Tokyo, Japan

**Group 6 P-062**

**Characterisation of a New Interleukin-1 Receptor Antagonist for Prevention of Preterm Birth and Neonatal Injuries**

Sarah-Eve Loiselle<sup>1</sup>, Renay Poupart<sup>1</sup>, Xin Hou<sup>1</sup>, Mathieu Nadeau-Vallee<sup>1</sup>, Christiane Quiniou<sup>1</sup>, Sarah Robertson<sup>2</sup>, David Olson<sup>3</sup>, Sylvain Chemtob<sup>1</sup>

<sup>1</sup>CHU Sainte-Justine Research Center, Universite de Montreal, Montreal, Canada

<sup>2</sup>University of Adelaide, Adelaide, Metropolitan Adelaide, Australia

<sup>3</sup>University of Alberta, Edmonton, Alberta, Canada

**Group 6 P-063****Kinetics of invariant natural killer T cells and antigen-presenting cells for extreme-to-moderate preterm birth without chorioamnionitis**

Masahiko Kato<sup>1</sup>, Yasuyuki Negishi<sup>2</sup>, Yoshio Shima<sup>3</sup>, Hidemi Takahashi<sup>2</sup>, Toshiyuki Takeshita<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Nippon Medical School, Tokyo, Japan

<sup>2</sup>Department of Microbiology and Immunology, Nippon Medical School, Tokyo, Japan

<sup>3</sup>Department of Pediatrics, Nippon Medical School Musashikosugi Hospital, Kanazawa, Japan

**Group 6 P-064****Low circulating levels of vitamin D may contribute to the occurrence of preeclampsia through deregulation of Treg /Th17 cell ratio**

Kahinho P. Muyayalo<sup>1</sup>, Mor Gil<sup>2</sup>, Ai-Hua Liao<sup>1</sup>

<sup>1</sup>Institute of Reproductive Health, Center for Reproductive Medicine, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, P.R. China

<sup>2</sup>C.S. Mott Center for Human Growth and Development, Wayne State University School of Medicine, Detroit, MI, USA

**Group 6 P-065****Identification of potential new biomarkers during pregnancy complications**

Marie-Eve Brien<sup>1,2,3</sup>, Ines Boufaied<sup>1</sup>, Nathalie Bernard<sup>4</sup>, Jean-Claude Forest<sup>4,5</sup>, Sylvie Girard<sup>1,2,3</sup>

<sup>1</sup>Ste-Justine Hospital Research Center, Montreal, Quebec, Canada

<sup>2</sup>Department of Obstetrics and Gynecology, Universite de Montreal, Montreal, Quebec, Canada

<sup>3</sup>Department of microbiology, infectiology and immunology, Universite de Montreal, Montreal, Quebec, Canada

<sup>4</sup>Centre de recherche du Centre Hospitalier Universitaire de Quebec, Quebec, Canada

<sup>5</sup>Department of Molecular Biology, Medical Biochemistry and Pathology, Faculty of Medicine, Universite Laval, Quebec, Canada

**Group 6 P-066**

**Peripheral blood Treg cell Foxp3 expression correlates inversely with uterine artery Resistance Index in late-onset preeclampsia**

Ella S. Green<sup>1</sup>, Alison S. Care<sup>1</sup>, Lachlan M. Moldenhauer<sup>1</sup>, Jasmine J. Wilson<sup>1</sup>, Petra Verburg<sup>1</sup>, Gus Dekker<sup>1</sup>, Claire T. Roberts<sup>1</sup>, Sarah A. Robertson<sup>1</sup>

<sup>1</sup>Robinson Research Institute, Adelaide Medical School, University of Adelaide, Australia

**Group 7 P-067**

**Galectin-3 systemic levels during pregnancy: relation with health and disease**

Nancy Freitag<sup>1,2</sup>, Irene Tirado-Gonzalez<sup>1</sup>, Debra Goldman-Wohl<sup>2</sup>, Caryn Greenfield<sup>2</sup>, Gabriela Barrientos<sup>3</sup>, Sandra M. Blois<sup>1,4</sup>

<sup>1</sup>Experimental and Clinical Research Center (ECRC), Charite University Medicine of Berlin-MDC, Germany

<sup>2</sup>Department of Obstetrics and Gynecology, Center for Human Placenta Research, Hadassah-Hebrew University Medical Centers, Mt. Scopus, Jerusalem, Israel

<sup>3</sup>Laboratory of Experimental Medicine, Hospital Aleman, School of Medicine, University of Buenos Aires, CONICET. Buenos Aires, Argentina.

<sup>4</sup>Charite University Medicine of Berlin, Division of General Internal and Psychosomatic Medicine, Germany.

**Group 7 P-068**

**Inflammatory Bowel Disease and Male Infertility: a Multicenter Study**

Zuzana Kratka<sup>1</sup>, Dana Duricova<sup>2</sup>, Martina Pfeiferova<sup>3</sup>, Karin Malickova<sup>1,2</sup>, Martin

Bortlik<sup>2</sup>

<sup>1</sup>Laboratory of Immunology, GENNET, Prague, Czech Republic

<sup>2</sup> IBD Clinical and Research Centre, ISCARE IVF, Prague, Czech Republic

<sup>3</sup>Czech IBD Patients Association, Prague, Czech Republic

**Group 7 P-069**

**Associaton of decreased mannose-binding lectin (MBL) levels with adverse pregnancy outcomes**

Michal Koucky<sup>1</sup>, Karin Malickova<sup>2</sup>, Helena Koprivova<sup>2</sup>, Andrej Cerny<sup>1</sup>, Hana Hrbackova<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, First Medical Faculty, Charles University, Prague, Czech republic  
<sup>2</sup>INSTITUTE OF MEDICAL BIOCHEMISTRY AND LABORATORY DIAGNOSTICS, First Medical Faculty, Charles University, Prague, Czech republic

**Group 7 P-070**

**The association between preterm labor, low number of T regulatory cells and Glycoprotein A repetition predominant (GARP) expression**

Andrej Cerny<sup>1</sup>, Michal Koucky<sup>1</sup>, Hana Hrbackova<sup>1</sup>, Karin Malickova<sup>2</sup>, Helena Koprivova<sup>2</sup>, Tereza Cindrova-Davies<sup>3</sup>, Miroslav Hindos<sup>2</sup>, Vaclav Capek<sup>4</sup>

<sup>1</sup>Department of Obsterics and Gynecology 1st Faculty of Medicine Charles University and General Faculty Hospital in Prague, Czech Republic

<sup>2</sup>Institute of Medical Biochemistry and Laboratory Diagnostics of the First Faculty of Medicine, General Teaching Hospital, Charles University in Prague, Prague, Czech Republic

<sup>3</sup>Department of Physiology, Development and Neuroscience, University of Cambridge, Cambridge, UK

<sup>4</sup>National Institute of Mental Health, Prague, Czech Republic

**Group 7 P-071****A case of thrombotic microangiopathy during pregnancy secondary to preeclampsia and systemic lupus erythematosus**

Satoshi Nitta<sup>1</sup>, Hironobu Hyodo<sup>1</sup>, Kanami Iwasa<sup>1</sup>, Chikako Hikosaka<sup>1</sup>, Midori Funakura<sup>1</sup>, Shinya Imada<sup>1</sup>, Kouji Kugu<sup>1</sup>

<sup>1</sup>Obstetrics and Gynecology department, Tokyo Metropolitan Bokutoh Hospital, Tokyo, Japan

**Group 7 P-072****Decreased Expression of PD1 in Peripheral blood Th17 Cells in Women with Unexplained Recurrent Pregnancy Loss**

wenjuan wang<sup>3</sup>, Maria Dinorah Salazar Garcia<sup>1</sup>, Joanne Kwak-Kim<sup>3</sup>, Kenneth Beaman<sup>3</sup>, Kenneth Beaman<sup>3</sup>

<sup>1</sup>Reproductive Medicine and Immunology, Department of Obstetrics and Gynecology, Chicago Medical School, Rosalind Franklin University of Medicine and Science

<sup>2</sup>Reproduction Medical Center, the affiliated Yantai Yuhuangding Hospital of Qingdao University

<sup>3</sup>Clinical Immunology Lab, Department of Microbiology and Immunology, Chicago Medical School, Rosalind Franklin University of Medicine and Science

**Group 7 P-073****Modulatory Effects of vitamin D on Endometrial Cellular Immunity in Women with Recurrent Miscarriage**

Xian Chen<sup>1</sup>, Ruochun Lian<sup>1</sup>, Shugui He<sup>1</sup>, Yong Zeng<sup>1</sup>

<sup>1</sup>Shenzhen Key Laboratory of Reproductive Immunology for Peri-implantation, Shenzhen Zhongshan Institute for Reproduction and Genetics Fertility Center, Shenzhen Zhongshan Urology Hospital



**Group 7** P-074**Role of oxidative stress and anti-oxidative potency in patients with recurrent pregnancy loss**

Megumi Nonobe<sup>1</sup>, Shoko Ide<sup>2</sup>, Fumiko Ozawa<sup>3</sup>, Shinobu Goto<sup>2,3</sup>, Tamao Kitaori<sup>2,3</sup>,  
Tatsuhiko Hojou<sup>1</sup>, Mayumi Sugiura-Ogasawara<sup>2,3</sup>, Yasuhiko Ozaki<sup>2,3,4</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Toyokawa City Hospital, Aichi, Japan

<sup>2</sup>Department of Obstetrics and Gynecology, Nagoya City University, Graduate School of Medical Science, Aichi, Japan

<sup>3</sup>Research Center for Recurrent Pregnancy Loss, Nagoya City University, Graduate School of Medical Science, Aichi, Japan

<sup>4</sup>The Education and Research Center for Advanced Medicine, Nagoya City University, Graduate School of Medical Science, Aichi, Japan

**Group 7** P-075**Correlation between IL-33, sST2 and Cathepsin G levels in decidua of patients with recurrent pregnancy loss**

Shinobu Goto<sup>1,2</sup>, Fumiko Ozawa<sup>3</sup>, Mayumi Sugiura-Ogasawara<sup>1,3</sup>, Yasuhiko Ozaki<sup>1,4</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Nagoya City University, Graduate School of Medical Sciences

<sup>2</sup>Division of Clinical and Molecular Genetics, Nagoya City University, Graduate School of Medical Science

<sup>3</sup>Research Center for Recurrent Pregnancy Loss, Nagoya City University, Graduate School of Medical Science

<sup>4</sup>The Education and Research Center for Advanced Medicine, Nagoya City University, Graduate School of Medical Science

**Group 7** P-076**The impact of immune-modulation therapy on patients with recurrent pregnancy**

**loss and KIR2DS1/HLA-C2 genotyping**

XIUHUA YANG<sup>3</sup>, WENJUAN WANG<sup>1,2</sup>, QIAOHUA HE<sup>1,2</sup>, Giovanni Jubiz<sup>1,2</sup>, Svetlana Dambaeva<sup>2</sup>, Alice Gilman-Sachs<sup>2</sup>, Kenneth Beaman<sup>2</sup>, Joanne Kwak-Kim<sup>1,2</sup>

<sup>1</sup>Reproductive Medicine and Immunology, Department of Obstetrics and Gynecology, Chicago Medical School, Rosalind Franklin University of Medicine and Science, Vernon Hills, 60061, IL, USA

<sup>2</sup>Clinical Immunology Laboratory, Department of Microbiology and Immunology, Chicago Medical School, Rosalind Franklin University of Medicine and Science, Vernon Hills, 60061, IL, USA

<sup>3</sup>Department of Obstetrics, The First Hospital of China Medical University, Shenyang, 110001, Liaoning, China

**Group 8 P-077**

**Anti-factor XII autoantibodies in patients with recurrent pregnancy loss recognize the second epidermal growth factor-like domain**

Yoshihiro Sato<sup>1,2</sup>, Toshitaka Sugi<sup>1</sup>

<sup>1</sup>Laboratory for Recurrent Pregnancy Loss, Sugi Women's Clinic, Yokohama, Japan

<sup>2</sup>Yoshihiro Women's Clinic, Tokyo, Japan

**Group 8 P-078**

**Cytokines production and co-expression of activating and inhibitory receptors of uterine NK cells in women with RPL**

Ryu Takeyama<sup>1</sup>, Atsushi Fukui<sup>1</sup>, Ayano Yamaya<sup>2</sup>, Yuji Ukita<sup>1</sup>, Hiroaki Shibahara<sup>1</sup>

<sup>1</sup>Hyogo college of medicine

<sup>2</sup>Hirosaki college

**Group 8 P-079**

### **Immunological aspect of uterine septum in women with recurrent pregnancy loss**

Takeshita Toshiyuki<sup>1</sup>, Yasuyui Negishi<sup>1,2</sup>, Masahiko Kato<sup>1</sup>, Shuichi Ono<sup>1</sup>, Hidemi Takahashi<sup>2</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Nippon Medical School, Tokyo, Japan

<sup>2</sup>Department of Microbiology and Immunology, Nippon Medical School, Tokyo, Japan

#### **Group 8 P-080**

### **Alterations in peripheral and uterine natural killer cells in patients with primary and secondary recurrent miscarriage**

Kilian Vomstein<sup>1,2</sup>, Riku Togawa<sup>2</sup>, Volker Daniel<sup>3</sup>, Bettina Toth<sup>1</sup>, Ruben J Kuon<sup>2</sup>

<sup>1</sup>Department of Gynecological Endocrinology and Reproductive Medicine, Medical University Innsbruck

<sup>2</sup>Department of Gynecological Endocrinology and Fertility Disorders, Ruprecht-Karls University Heidelberg

<sup>3</sup>Transplantation-Immunology, Institute of Immunology, Ruprecht-Karls University Heidelberg

#### **Group 8 P-081**

### **Reproductive outcomes of women with recurrent pregnancy loss (RPL) and repeated implantation failure (RIF) are significantly improved with immune modulatory treatment**

giovanni jubiz<sup>1</sup>, Khan S.A.<sup>1</sup>, N Salazar<sup>1</sup>, N Sung<sup>1</sup>, M.E. yu<sup>1</sup>, A.M. Skariah<sup>1</sup>, S Dambaeva<sup>2</sup>, J Kwak-Kim<sup>1,2</sup>

<sup>1</sup>Reproductive Medicine and Immunology, Department of Obstetrics and Gynecology, Chicago Medical School, Rosalind Franklin University of Medicine and Science, Vernon Hills, IL, USA.

<sup>2</sup>Department of Microbiology and Immunology, Chicago Medical School, Rosalind Franklin University of Medicine and Science, North Chicago, IL, USA

**Group 8 P-082****Clinical significance of MMPs (matrix metalloproteinases) and TIMPs (tissue inhibitors of metalloproteinases) with recurrent miscarriage**

Fumiko Ozawa<sup>1</sup>, Ryosuke Mori<sup>1,2</sup>, Yuki Obayashi<sup>3</sup>, Shinobu Goto<sup>1,2</sup>, Tamao Kitaori<sup>1,2</sup>, Mayumi Sugiura<sup>1,2</sup>, Yasuhiko Ozaki<sup>1,2,4</sup>

<sup>1</sup>Research Center for Recurrent Pregnancy Loss, Nagoya City University, Graduate School of Medical Science, Aichi, Japan

<sup>2</sup>Department of Obstetrics and Gynecology, Nagoya City University, Graduate School of Medical Science, Aichi, Japan

<sup>3</sup>Kasugai Maternity Clinic, Aichi, Japan

<sup>4</sup>The Education and Research Center for Advanced Medicine, Nagoya City University, Graduate School of Medical Science, Aichi, Japan

**Group 8 P-083****Intravenous immunoglobulin in IVF-ET/FET cycles at the time of positive pregnancy test significantly improves the live birth rate in patients with recurrent pregnancy losses and repeated implantation failure**

S. Khan<sup>1</sup>, ME.L. Yiu<sup>1</sup>, M.D. Salazar<sup>1</sup>, N. Sung<sup>1</sup>, S. Dambaeva<sup>2</sup>, Joanne Kwak-Kim<sup>1,2</sup>

<sup>1</sup>Reproductive Medicine and Immunology, Department of Obstetrics and Gynecology, Chicago Medical School at Rosalind Franklin University of Medicine and Science, Vernon Hills, IL, USA

<sup>2</sup>Department of Microbiology and Immunology, Chicago Medical School at Rosalind Franklin University of Medicine and Science, North Chicago, IL, USA

**Group 8 P-084****Search for a novel "neo-self" antigen to elucidate the pathogenesis of seronegative obstetric antiphospholipid syndrome**

Yoshimitsu Kuwabara<sup>1</sup>, Akira Katayama<sup>2</sup>, Sachiko Kurihara<sup>1</sup>, Yosuke Sugita<sup>1</sup>, Nozomi Ouchi<sup>1</sup>, Tomoko Ichikawa<sup>1</sup>, Toshiyuki Takeshita<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Nippon Medical School, Tokyo, Japan

<sup>2</sup>Department of Biochemistry and Molecular Biology, Nippon Medical School, Tokyo, Japan

**Group 8 P-085**

**Neutrophil to lymphocyte ratio is a marker for Recurrent Pregnancy Loss**

Xiaomiao Zhao<sup>4</sup>, Sushi Jiang<sup>1</sup>, Min Tan<sup>1</sup>, Guanlei Wang<sup>2</sup>, Wenming Xu<sup>3</sup>, Guijun Guan<sup>4</sup>, Lin Li<sup>1</sup>

<sup>1</sup>Medical Center for reproduction, Department of Obstetrics and Gynecology, Sun Yat-sen Memorial Hospital of Sun Yat-sen University, Guangzhou 510120, Guangdong, China

<sup>2</sup>Department of Pharmacology, Cardiac and Cerebral Vascular Research Center, Zhongshan School of Medicine, Sun Yat-sen University, Guangzhou, 510080, China

<sup>3</sup>Key Laboratory of Birth Defects and Related Diseases of Women and Children (Sichuan University), Ministry of Education, Sichuan University, Chengdu 610041, China

<sup>4</sup>International Research Center for Marine Biosciences at Shanghai Ocean University, Ministry of Science and Technology, Shanghai 201306, China

**Group 8 P-086**

**The expression of Nkp46 on uterine NK cells and Cytokines Production by NK cells in women with recurrent pregnancy loss**

Mayu Yamamoto<sup>1</sup>, Atsushi Fukui<sup>1</sup>, Ryu Takeyama<sup>1</sup>, Chuxian Mai<sup>1</sup>, Hiroaki Shibahara<sup>1</sup>

<sup>1</sup>Obstetrics and Gynecology of Hyogo College of Medicine, Hyogo, Japan

**Group 9 P-087**

**Immunohistochemical evaluation of immune cell markers CD16, CD45, CD56, and CD57 in the endometrium of women with recurrent pregnancy loss**

Maia Chiokadze<sup>1</sup>, Christin Bar<sup>1</sup>, Jana Pastuschek<sup>1</sup>, Priska Streicher<sup>1</sup>, Boris V. Dons'koi<sup>2</sup>, Ekkehard Schleussner<sup>1</sup>, Udo R. Markert<sup>1</sup>, Rodolfo R. Favaro<sup>1</sup>

<sup>1</sup>Placenta Lab, Department of Obstetrics, University Hospital Jena, Jena, Germany.

<sup>2</sup>Laboratory of Immunology, Institute of Pediatrics, Obstetrics and Gynecology, National Academy of Medical Sciences of Ukraine, Kiev, Ukraine.

**Group 9 P-088**

**Treatment for patients with reproductive failure positive for anti-phospholipid antibodies using Sairei-to and low-dose aspirin**

Taro Nonaka<sup>1</sup>, Makiko Takahashi<sup>1</sup>, Koichi Takakuwa<sup>2</sup>, Takayuki Enomoto<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Niigata University Medical and Dental Hospital, Niigata, Japan

<sup>2</sup>General Center for Perinatal, Maternal and Neonatal Medicine, Niigata University Medical and Dental Hospital, Niigata, Japan

**Group 9 P-089**

**The effect of a fatty acid-based oral formula on peripheral blood NK cell disturbances in sub-fertile women**

Barbara Geladak<sup>2</sup>, Theodora Keramitsoglou<sup>2</sup>, Christina Mpalamoti<sup>3</sup>, Christina Tsekoura<sup>2</sup>, Ch. Tsarmaklis<sup>1</sup>, Marighoula Varla-Leftherioti<sup>1,2</sup>

<sup>1</sup>Rodi Pharmaceuticals, Research and Development

<sup>2</sup>Dept of Immunology and Histocompatibility, Helena Venizelou Hospital, Athens Greece

<sup>3</sup>Dept of Nutrition Helena Venizelou Hospital, Athens, Greece

**Group 9 P-090**

**TNF-a and GM-CSF levels in early embryo culture medium is related to the embryo implantation potential during IVF**

Wenming Xu<sup>1</sup>, Jiao Lv<sup>1</sup>, Li Heng<sup>2</sup>, Minhui Zhu<sup>2</sup>

<sup>1</sup>Laboratory of Reproductive regulation, West China Second University Hospital, Sichuan University, Chengdu, China

<sup>2</sup>Reproductive Medicine Center, Chengdu University of Chinese Medicine, Chengdu, China

**Group 9 P-091**

**The correlation of increased serum homocysteine level and IVF outcome**

Li Wu<sup>1</sup>, Qi Jin<sup>1</sup>, Joanne Kwak-Kim<sup>2</sup>, Hao Yu Wang<sup>1</sup>, Yu Zhang<sup>1</sup>

<sup>1</sup>Center for Reproductive Medicine, The First Affiliated Hospital of USTC, University of Science and Technology of China, Hefei, Anhui, 230001, China

<sup>2</sup>Reproductive Medicine and Immunology, Chicago Medical School, Rosalind Franklin University of Medicine and ScienceN. Chicago, IL, USA.

**Group 9 P-092**

**In regards to different density of CD16 on NK cells, are they play different role in reproductive outcome?**

Chuxian Mai<sup>1</sup>, Atsushi Fukui<sup>1</sup>, Mayu Yamamoto<sup>1</sup>, Ryu Takeyama<sup>1</sup>, Hiroaki Shibahara<sup>1</sup>

<sup>1</sup>Hyogo College of Medicine, Hyogo, Japan

**Group 9 P-093**

**Early transient suppression of immune checkpoints Tim-3 and PD-1 in peripheral blood after blastocyst transfer is associated with successful implantation**

Tao Zhang<sup>1</sup>, Yiwei Zhao<sup>1</sup>, Wenyue Zhu<sup>1</sup>, Wing Ching Cheung<sup>1</sup>, Tin Chiu Li<sup>1</sup>

<sup>1</sup>Assisted Reproductive Technology Unit, Department of Obstetrics and Gynaecology, Faculty of Medicine, The Chinese University of Hong

**Group 9 P-094**

**Lymphocyte count as a determinant of success of lymphocyte immunization therapy in unexplained recurrent implantation failures**

Mugdha Raut<sup>1</sup>, Mohan Raut<sup>1</sup>

<sup>1</sup>Immunotherapy Centre for Prevention of Repeated Miscarriages (ICPRM), Mumbai, India

**Group 9 P-095**

**Impact of thyroid autoimmunity on ovarian reserve, pregnancy outcome and offspring health in euthyroid women following in vitro fertilization /intracytoplasmic sperm injection**

Xue Jiao<sup>1,2,3</sup>, Hanni Ke<sup>1,2,3</sup>, Jingmei Hu<sup>1,2,3</sup>, Lijuan Zhao<sup>1,2</sup>, Lingling Ding<sup>1,2,3</sup>, Yingying Qin<sup>1,2,3</sup>

<sup>1</sup>Center for Reproductive Medicine, Shandong University, Jinan, Shandong, China

<sup>2</sup>National Research Center for Assisted Reproductive Technology and Reproductive Genetics, Jinan, Shandong, China

<sup>3</sup>The Key Laboratory of Reproductive Endocrinology (Shandong University), Ministry of Education, Jinan, Shandong, China

**Group 9 P-096**

**Thyroid-stimulating hormone receptor expression by peripheral blood lymphocytes**



Eva Miko<sup>1</sup>, Balint Balogh<sup>2</sup>, Gyorgy Setalo<sup>2</sup>, Emese Mezosi<sup>3</sup>, Timea Balassa<sup>2</sup>, Judit Varga<sup>2</sup>, Matyas Meggyes<sup>1</sup>, Aliz Barakonyi<sup>1</sup>, Laszlo Szereday<sup>1</sup>

<sup>1</sup>Department of Medical Microbiology and Immunology, Medical School, University of Pecs, Pecs Hungary

<sup>2</sup>Department of Medical Biology and Central Electron Microscope Laboratory, Medical School, University of Pecs, Pecs Hungary

<sup>3</sup>1st Department of Medicine, Medical School, University of Pecs, Pecs Hungary

**Group 10 P-097**

**Inflammatory Bowel Disease and Female Infertility: A Multicenter Study**

Zuzana Kratka<sup>1</sup>, Dana Duricova<sup>2</sup>, Martina Pfeiferova<sup>3</sup>, Karin Malickova<sup>1,2</sup>, Martin Bortlik<sup>2</sup>

<sup>1</sup>Laboratory of Immunology, GENNET, Prague, Czech Republic

<sup>2</sup>IBD Clinical and Research Centre, ISCARE IVF a.s., Prague, Czech Republic

<sup>3</sup>Czech IBD Patients Association, Prague, Czech Republic

**Group 10 P-098**

**Monitoring of peripheral T-regulatory lymphocytes dynamics in pregnant women with fertility disorders undergoing immunomodulatory therapies**

Zaneta Dzurillova<sup>1</sup>, Martin Dzurilla<sup>1</sup>

<sup>1</sup>Outpatient dpt. of reproductive immunology, Medicentrum Dzurilla, Nitra, Slovakia

**Group 10 P-099**

**Asymptomatic Urogenital Infection as a Risk Factor for Male and Female Infertility**

Zuzana Kratka<sup>1</sup>, Stepanka Luxova<sup>1</sup>, Alena Langerova<sup>2</sup>, Jan Novak<sup>3,4</sup>, Viktor Vik<sup>3</sup>

<sup>1</sup>Laboratory of Immunology, GENNET, Prague, Czech Republic

<sup>2</sup>IVF Clinic GENNET, Prague, Czech Republic

<sup>3</sup>Urology and Andrology, GENNET, Prague, Czech Republic

<sup>4</sup>Department of Urology, General University Hospital and 1st Medical Faculty of Charles University, Prague, Czech Republic

**Group 10 P-100**

**Determination of Cytokine Profile in Infertile Women**

Stepanka Luxova<sup>1</sup>, Zuzana Kratka<sup>1</sup>, Karin Malickova<sup>2</sup>

<sup>1</sup>Laboratory of Immunology GENNET, Prague, Czech Republic

<sup>2</sup>ISCARE IVF, Prague, Czech Republic

**Group 10 P-101**

**The Paternal Lymphocytes Immunization (PLI) can decrease Anti-sperm Antibodies in wife's blood serum using the Sperm Auto Agglutination Test (HSAaT) methode in unexplained infertility couples**

Indra Gusti Mansur<sup>1</sup>, Nani Sari Murni<sup>1</sup>, Nur Hafiz Ramadhona<sup>2</sup>, Ichramsyah A Rahman<sup>3</sup>, Mohamad Sadikin<sup>1</sup>

<sup>1</sup>Faculty of Medicine, University of Indonesia, Jakarta

<sup>2</sup>Sayyidah Mother and Child Hospital, Jakarta, Indonesia

<sup>3</sup>Budhi Jaya Mother and Child Hospital, Jakarta, Indonesia

**Group 10 P-102**

**The Paternal Lymphocytes Immunization (PLI) impact on percentage of regulatory t cells population in wife's pbmc in unexplained infertility couples**

Nani Sari Murni<sup>1</sup>, Indra Gusti Mansur<sup>1,2</sup>, Ichramsyah A Rahman<sup>3</sup>, Mohamad Sadikin<sup>1</sup>

<sup>1</sup>Faculty of Medicine, University of Indonesia, Jakarta, Indonesia

<sup>2</sup>Sayyidah Mother and Child Hospital, Jakarta, Indonesia

<sup>3</sup>Budhi Jaya Mother and Child Hospital, Jakarta, Indonesia

**Group 10** P-103

**Withdrawn**

**Group 10** P-104

**Role of occludin in maintaining homeostatic microenvironment in the epididymis**

Winnie Shum<sup>1</sup>, Bao-Li Zhang<sup>1,2,3</sup>, Bao-Ying Liu<sup>1,2,3</sup>, Ze-Peng Zhang<sup>1,2,3</sup>, Sylvie Breton<sup>4</sup>, Yong-Lian Zhang<sup>2</sup>, Jin-Song Li<sup>2</sup>

<sup>1</sup>School of Life Science and Technology, ShanghaiTech University

<sup>2</sup>State Key Laboratory of Cell Biology, Shanghai Institute of Biochemistry and Cell Biology, Chinese Academy of Sciences, University of Chinese Academy of Sciences

<sup>3</sup>University of Chinese Academy of Sciences, Beijing, China

<sup>4</sup>Center for Systems Biology, Program in Membrane Biology and Division of Nephrology, Department of Medicine, Massachusetts General Hospital and Harvard Medical School

**Group 10** P-105

**Effects of prokineticin 2 on testicular inflammation in rats**

Ying Li<sup>1</sup>, Huiping Zhang<sup>1</sup>, Chunyan Liu<sup>1</sup>, Kai Zhao<sup>1</sup>

<sup>1</sup>Institute of Reproductive Health, Tong Ji Medical college, Huazhong University of Science and Technology

**Group 10** P-106

**Characterization of CCR6 and CCL20 in testis and ejaculates from men with chronic genital tract inflammation**

YONG-GANG DUAN<sup>1</sup>, Chunfeng Yu<sup>2</sup>, William S.B. Yeung<sup>1</sup>, Gerhard Haidl<sup>2</sup>, Jean-Pierre Allam<sup>2</sup>

<sup>1</sup>Shenzhen Key Laboratory of Fertility Regulation, Centre of Assisted Reproduction and Embryology, The University of Hong Kong - Shenzhen Hospital, Shenzhen, China

<sup>2</sup>Department of Dermatology / Andrology Unit, University of Bonn, Bonn, Germany

**Group 11** P-107

**Three-Dimensional Analyses of Mitochondria in Spermatogenic Cells of Rat testis with SBF-SEM**

Tomohiko Wakayama<sup>1</sup>, Nobuhiko Ohno<sup>2</sup>, Ryoko Inumaru<sup>3</sup>, Suthat Duangchit<sup>1</sup>, Wanta Arunothai<sup>1</sup>, Kazuhiro Noguchi<sup>1</sup>, Tatsuo Kawarasaki<sup>3</sup>

<sup>1</sup>Department of Histology, Graduate School of Medical Sciences, Kumamoto University, Kumamoto, Japan

<sup>2</sup>Department of Histology, School of Medicine, Jichi Medical University, Shimotsuke, Japan

<sup>3</sup>Department of Animal Science, School of Agriculture, Tokai University, Kumamoto, Japan

**Group 11** P-108

**Comparison of experimental autoimmune orchitis as a model for immune male infertility**

Fan Zunpan<sup>1</sup>, Zhao Kai<sup>1</sup>, Liu Chunyan<sup>1</sup>, Zhang Huiping<sup>1</sup>

<sup>1</sup>Institute of reproductive health, tongji medical college, huazhong university of science and technology

**Group 11** P-109

**Autophagy activation increases primordial follicle number with raising oocyte viability**

Sho Sasaki<sup>1</sup>, Mizuho Obara<sup>1</sup>, Ken Umeno<sup>1</sup>, Ren Watanabe<sup>1</sup>, Naoko Kimura<sup>1</sup>

<sup>1</sup>Laboratory of Animal Reproduction, Graduate School of Agricultural Sciences, Yamagata University, Japan

**Group 11** P-110

**Increased expression of HLA-G is associated with placenta accreta**

Masako Hayashi<sup>1</sup>, Hironori Katayama<sup>2</sup>, Yasuyuki Negishi<sup>3</sup>, Hiromi Iwase<sup>2</sup>, Keiko Azuma<sup>2</sup>, Masaru Hosone<sup>2</sup>, Atsuko Sekiguchi<sup>1</sup>, Akihito Nakai<sup>1</sup>, Toshiyuki Takeshita<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Nippon Medical School, Tokyo, Japan

<sup>2</sup>Department of Pathology, Nippon Medical School, Tokyo, Japan

<sup>3</sup>Department of Microbiology and Immunology, Nippon Medical School, Tokyo, Japan

**Group 11** P-111

**Acute inflammation and anaphylactoid reaction in uterine isthmus of postpartum women affected by Postpartum Acute Myometritis (PAM)**

Divyanu Jain<sup>1</sup>, Tomoaki Oda<sup>1</sup>, Naoaki Tamura<sup>1</sup>, Hiroaki Itoh<sup>1</sup>, Naohiro Kanayama<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Hamamatsu University School of Medicine, Hamamatsu, Japan

**Group 11** P-112

**Investigating the phenotypes of immune cell in gut-associated lymphoid tissues in ulcerative colitis with mass cytometry and imaging mass cytometry**

Na Zhang<sup>1</sup>, Chathyan Pararasa<sup>2</sup>, Ling Wang<sup>1</sup>, Dajin Li<sup>1</sup>, Anna Vossenkamper<sup>3</sup>, Jo Spencer<sup>2</sup>

<sup>1</sup>Obstetrics and Gynaecology Hospital, Fudan University, Shanghai, China

<sup>2</sup>Peter Gorer Department of Immunobiology, King's College London, Guy's Hospital, London, United Kingdom

<sup>3</sup>Blizard Institute, Barts and the London School of Medicine and Dentistry, Queen Mary University London, London, United Kingdom

**Group 11** P-113

**The characteristic of CD4+CD25+CD127low/- T regulatory cells in peripheral blood, cord blood, and postpartum uterine blood**

wenjuan wang<sup>1,2</sup>, yuanyuan zhao<sup>1</sup>, xiaolu zhang<sup>1</sup>, hong sun<sup>1</sup>, Joanne Kwak-Kim<sup>2</sup>

<sup>1</sup>Reproduction Medical Center, the affiliated Yantai Yuhuangding Hospital of Qingdao University

<sup>2</sup>Reproductive Medicine and Immunology, Department of Obstetrics and Gynecology, Chicago Medical School, Rosalind Franklin University of Medicine and Science, Vernon Hills, 60061, IL, USA.

**Group 11** P-114

**Tumor-induced exhaustion of NK cells and its prevention by mitochondrial biogenesis through metabolic reprogramming**

Itzel Lazcano<sup>1</sup>, Pincas Bitterman<sup>2</sup>, Janice M Bahr<sup>3</sup>, Animesh Barua<sup>1,2</sup>

<sup>1</sup>Department of Cell and Molecular Medicine, Department of Pathology, Rush University, Chicago, Illinois, USA

<sup>2</sup> Department of Pathology, Rush University, Chicago, Illinois, USA

<sup>3</sup>Department of Animal Sciences, University of Illinois at Urbana-Champaign, Illinois, USA

**Group 11** P-115

**A case of intrauterine fetal death after treatment for syphilis**

Saho Fujino<sup>1</sup>, Hironobu Hyodo<sup>1</sup>, Naoya Sakamoto<sup>2</sup>, Chikako Hikosaka<sup>1</sup>, Koji Kugu<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Tokyo Metropolitan Bokutoh Hospital, Tokyo, Japan

<sup>2</sup>Department of Infectious Diseases, Tokyo Metropolitan Bokutoh Hospital, Tokyo, Japan

**Group 11** P-116

**Two case reports of anti-NMDA receptor encephalitis caused by small ovarian teratoma**

RYO MAEKAWA<sup>1</sup>, Masahiro Shinagawa<sup>1</sup>, Toshiaki Taketani<sup>1</sup>, Isao Tamura<sup>1</sup>, Haruka Takagi<sup>1</sup>, Yumiko Mihara<sup>1</sup>, Yuichiro Shirafura<sup>1</sup>, Yumiko Tanaka<sup>1</sup>, Hiroshi Tamura<sup>1</sup>, Norihiro Sugino<sup>1</sup>

<sup>1</sup>Yamaguchi University Graduate School of Medicine

**Group 11** P-117

**Sertoli cells have non-canonical functional inflammasome network, including Nlrp3 and Nlrc4, being able to potentially perturb the testis niche immune tolerance by differentially inflicting caspase-1-dependent cell death**

Krassimira Todorova<sup>1</sup>, Ilka Tsvetkova<sup>1</sup>, Soren Hayrabedyan<sup>1</sup>

<sup>1</sup>Laboratory of Reproductive OMICs Technologies, Institute of Biology and Immunology of Reproduction “Acad. Kiril Bratanov”, Bulgarian Academy of Sciences, Bulgaria