VIIth International Symposium on:
INTERSTITIAL CELLS OF CAJAL

Florence (Italy), September 2nd - 5th, 2012

Organized by

Farncombe Family Digestive Health Research Institute
McMASTER UNIVERSITY, HAMILTON, ONTARIO, CANADA

Department of Anatomy, Histology and Forensic Medicine,
Section of Histology
UNIVERSITÀ DEGLI STUDI DI FIRENZE, ITALY

and

FONDAZIONE INTERNAZIONALE MENARINI

SCIENTIFIC PROGRAM

Hotel Albani
(Via Fiume, 12)
Under the Auspices of

Università degli Studi di Firenze

Co-Presidents of the Symposium

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McMaster University
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Sunday, September 2nd, 2012 - Afternoon

05.00 - 07.00 p.m.  Registration, Hotel Albani

07.00 p.m.  Welcome Reception for all Participants, Hotel Albani

From: *Viajes fotograficos de Santiago Ramon y Cajal, 1903*

Monday, September 3rd, 2012 - Morning

08.15 a.m.  **Welcome addresses**
Authorities
**Maria-Simonetta Faussone-Pellegrini** (Florence, I)
**Jan D. Huizinga** (Hamilton, CDN)

**Special Lecture with two voices**
Chairperson:  **Jan D. Huizinga** (Hamilton, CDN)
08.30 a.m.  **Santiago Ramón y Cajal Junquera** (Zaragoza, E)
Art and Science in Santiago Ramon y Cajal’s Life
**Concepción Junquera** (Zaragoza, E)
Interstitial Cells of Cajal: original histological slides and drawings seen today

**Session I**  **Interstitial cells of Cajal from morphology to function and dysfunction**
Chairpersons:  **Anthony Bauer** (Pittsburg, USA)
**Raj K. Goyal** (Boston, USA)
09.30 a.m.  **Hanne B. Mikkelsen** (Copenhagen, DK)
The start of ICC research in modern times
10.00 a.m.  **Jean-Marie Vanderwinden** (Brussels, B)
ICC in tissue and stromal tumors
10.30 a.m.  **Maria Giuliana Vannucchi** (Florence, I)
The interstitial cells of Cajal located at the deep muscular plexus (ICC-DMP)
11.00 a.m.  **Coffee break**

**Session II**  **ICC in organ function**
Chairpersons:  **Jihong Chen** (Wuhan, CN)
**William G. Paterson** (Kingston, CDN)
11.30 a.m.  **Gregory O’Grady** (Auckland, NZ)
High definition gastric electrical activity analysis in the human
12.00 a.m.  **Willem J.E.P. Lammers** (Al Ain, UAE)
The propagation of electrical signals and networks of Interstitial Cells of Cajal
12.30 a.m.  **Marcel Jimenez** (Barcelona, E)
Colonic pacemakers and gaseous transmitters
01.00 p.m.  **Lunch**
Monday, September 3rd, 2012 - Afternoon

Session III  ICC development and recovery

Chairpersons: Miyaka Takaki (Nara, J)  
               Jiande Chen (Galveston, USA)

02.00 p.m. Tamas Ordog (Rochester, USA)  
            ICC stem cells: interaction between nutrient-sensing  
            and morphogenetic pathways to control self-renewal  
            and senescence

02.30 p.m. Simon J. Gibbons (Rochester, USA)  
            ICC changes in diabetic gastroparesis and other motility  
            disorders

03.00 p.m. Shigeko Torihashi (Nagoya, J)  
            Gut organ development - Investigation using in vitro system

03.30 p.m. Coffee break

Session IV  Communication between ICC and the enteric nervous system

Chairpersons: Menachem Hanani (Jerusalem, IL)  
               Jean-Pierre Timmermans (Antwerp, B)

04.00 p.m. Marcello A. Costa (Adelaide, AUS)  
            Neurogenic and myogenic factors of intestinal motility

04.30 p.m. Terence K. Smith (Reno, USA)  
            Cooperation between ICC and nerves

05.00 p.m. Yong-Fang Zhu (Hamilton, CDN)  
            Enteric nervous system input into small intestine ICC-MP  
            and ICC-DMP calcium transients

05.30 p.m. Insuk So (Seoul, ROK)  
            Involvement of Na’-leak channel in substance P-induced depolarization of pacemaking activity  
            in Interstitial Cells of Cajal
Tuesday, September 4th, 2012 - Morning

Session V  Calcium signalling in ICC

Chairpersons: Kenton M. Sanders (Reno, USA)
Roberto De Giorgio (Bologna, I)

09.00 a.m. Grant Hennig (Reno, USA)
Ca$^{2+}$ imaging in the gut

09.30 a.m. Gerard P. Sergeant (Dundalk, IRL)
Mechanisms of pacemaker activity in ICC of the urethra

10.00 a.m. Richard J. Lang (Clayton, AUS)
Does Ca$^{2+}$ signaling drive pyeloureteric peristalsis?
Involvement of atypical smooth muscle cells
and interstitial cells

10.30 a.m. Coffee break

Session VI  ICC ion channels and pacemaking

Chairperson: Joe Szurszewski (Rochester, USA)

11.00 a.m. Jae Yeoul Jun (Gwangju, ROK)
Lipopolysaccharide effects on ICC pacemaker activity

11.30 a.m. Sean P. Parsons (Hamilton, CDN)
How many chloride channels do you need?

12.00 a.m. Gianrico Farrugia (Rochester, USA)
A different role for Ano1 in ICC

12.30 a.m. Yoshihiko Kito (Nabeshima, J)
Pacemaker potentials recorded from ICC-MY in the rabbit small intestine

01.00 p.m. Lunch
Wednesday, September 5th, 2012 - Morning

Final viewing and discussion of posters

Chairpersons: Joe Szurszewski (Rochester, USA)
Noel McHale (Dundalk, IRL)

09.00 a.m. Viewing and discussion of the posters
09.45 a.m. General discussion of the posters
10.30 a.m. Coffee break

Session VII ICC companions?

Chairpersons: Shinsuke Nakayama (Nagoya, J)
Joel Bornstein (Melbourne, AUS)

11.00 a.m. Kathleen D. Keef (Reno, USA)
Fibroblast-like cells

11.30 a.m. Hikaru Hashitani (Nagoya, J)
Pericytes - Genuine pacemaker cells in suburothelial venules of the bladder

12.00 a.m. Laurentiu M. Popescu (Bucharest, RO)
Telocytes

12.30 a.m. Lunch
Wednesday, September 5th, 2012 - Afternoon

Session VIII  ICC outside gut

Chairpersons:  Terumasa Komuro (Tokorozawa, J)
               Gary M. Mawe (Burlington, USA)

01.30 p.m.  Mohammad S. Imtiaz (Newcastle, AUS)
            Lymphatic pacemaking - a symbiosis of mechanisms

02.00 p.m.  Sean M. Ward (Reno, USA)
            Role of ICC in egg transport by the oviduct in health
            and disease

02.30 p.m.  Karen D. McCloskey (Belfast, UK)
            An updated view of interstitial cells of Cajal
            in the urinary bladder

Concluding remarks

Chairperson:  Maria-Simonetta Faussone-Pellegrini (Florence, I)

03.00 p.m.  Kenton M. Sanders (Reno, USA)
            Highlights and controversies in interstitial cell research;
            where to go from here..?

03.30 p.m.  Jan D. Huizinga (Hamilton, CDN)
            End of the symposium

From: Viajes fotograficos de Santiago Ramon y Cajal, 1903

14. Vista de la cupòla del Duomo y del Campanile, desde la via de Pecori, Florencia.
POSTERS

   (Reno, USA)
   Responses to enteric motor neurons in mutant mice with reduced intramuscular ICC in the murine gastric fundus

2. **Carbone S.E., Wattchow D.A., Spencer N.J., Brookes S.J.H.**
   (Adelaide, Australia)
   The responsiveness of smooth muscle cells in the guinea pig ileum is affected by elements of dissection

3. **Cromie R., Shonnard M., Riley H., Romanick S., Hennig G.**
   (Reno, USA)
   High slow wave frequencies reduce the frequency of antral peristaltic contractions in the isolated murine stomach

   (Dublin, Ireland)
   Role of Ca\(^{2+}\) influx and diffusion in the initiation and propagation of calcium waves in ICC freshly isolated from the rabbit urethra

5. **Lam M., Dey A., Chakrabarty B., Exintaris B.**
   (Victoria, Australia)
   Pacemaker activity, c-kit positive cells and contractility in the prostate gland

6. **Gevaert T.**
   (Leuven, Belgium)
   Identification of telocytes in the upper lamina propria of the human urinary tract

   (Rochester and Pittsburgh, USA)
   IL-10 Reverses Delayed Gastric Emptying, Slow Wave Abnormalities and Smooth Muscle Membrane Potential Gradient changes in Diabetic NOD/ShiLtJ Mice

   (Belfast and Cambridge, UK)
   *In situ* calcium responses of ICC populations in the guinea-pig bladder to electrical field stimulation suggests functional innervation
9. **He X.-D., Goyal R.K.**  
(Boston USA)  
Cellular location and nature of the ion channel responsible for nitrergic inhibitory junction potential (IJP) in the smooth muscle cells

10. **Iino S., Horiguchi K., Horiguchi S.**  
(Fukui, Japan)  
Interstitial cells of Cajal in c-Kit mutant mice

11. **Kim B.J., Nam J.H., Kim S.J., So I.**  
(Yangsan, Kyungju, Seoul, Korea)  
Effects of Transient Receptor Potential Channel Blockers on Pacemaker Activity in Interstitial Cells of Cajal from Mouse Small Intestine

(Hamilton, Canada and Potosí, México)  
Molecular screening of chloride channels in single interstitial cells of Cajal

13. **Luesma M.J., Castiella T., Muñoz G., Santander S., Cajal S., Junquera C.**  
(Zaragoza, Spain)  
Primary cilia in interstitial cells of Cajal (ICCs) and gastrointestinal stromal tumor (GIST)

(Florence, Italy)  
Telocytes in normal and scleroderma skin

15. **Marques P., Silva I., Vieira C., Ferreirinha F., Magalhães-Cardoso M.T., Duarte-Araújo M., Correia-de-Sá P.**  
(Porto, Portugal)  
Muscarinic neuromuscular transmission amplification by adenosine released from interstitial cells of Cajal of the rat ileum

16. **Mitsui R., Miyamoto S., Takano H., Hashitani H.**  
(Nagoya, Japan)  
Functional characteristics of submucosal venule in rat distal colon

17. **Nakayama S., Taniguchi M., Shozib H.B., Sawamura K.**  
(Nagoya, Japan)  
Spatial Characterization of Spontaneous Electric Activity in the Ileum of Mice Using Arrayed Microelectrodes with Increased Surface Area
18. **Paterson W.G., Zhang Y.**  
(Kingston, Canada)  
Characterization of ascending and descending colonic neuromuscular reflexes in wild type and interstitial cell of Cajal (ICC)-deficient mice

19. **Pistilli M.J., Parsons S.P., Huizinga J.D.**  
(Hamilton, Canada)  
Myogenic origin of rhythmic propulsion of the murine jejunum in vitro

20. **Radenkovic G.**  
(Nis, Serbia)  
Development of c-kit-immunopositive interstitial cells of Cajal in the human digestive tract

21. **Tamada H., Hashitani H., Komuro T.**  
(Nagoya and Tokorozawa, Japan)  
Morphological features of the interstitial cells of Cajal associated with the submucosal plexus

(Rochester, USA)  
Insulin-like growth factor 1 (IGF1) encodes memory of past food intake via pleiotropic effects on the gastric neuromuscular apparatus

23. **Uyttebroek L., Shepherd I.T., Hubens G., Timmermans J.-P., Van Nassauw L.**  
(Antwerp, Belgium and Atlanta, USA)  
Ano1, a marker for interstitial cells of Cajal in the zebrafish intestine

(Hamilton, Canada)  
Distribution of pacemaker cells and peristaltic coordination in human gastro-duodenal junction

25. **Wright G.W.J., Parsons S.P., Huizinga J.D.**  
(Hamilton, Canada)  
Colonic interstitial cells of Cajal associated with the myenteric plexus harbour ion channels regulated by cholinergic neurotransmission
GENERAL INFORMATION

Meeting address
The Meeting will take place at “Hotel Albani” - Via Fiume, 12 - Florence (Italy).
Tel.: +39 055 26030.

Secretariat during the Meeting
Opening hours:
Sunday, September 02\textsuperscript{nd}, from 05.00 p.m. to 07.00 p.m.
Monday, September 03\textsuperscript{rd}, from 08.00 a.m. to 05.30 p.m.
Tuesday, September 04\textsuperscript{th}, from 08.30 a.m. to 01.00 p.m.
Wednesday, September 05\textsuperscript{th}, from 08.30 a.m. to 04.00 p.m.

Official Language
The official language of the Congress is English. Simultaneous translation will not be provided.

Registration fees
active participants Euro 300,00
one day participation Euro 80,00
All active participants are entitled to:
- attend all scientific sessions
- receive congress kit including Abstract Book
- have access to social events
  (Sunday 2\textsuperscript{nd} and Wednesday 5\textsuperscript{th} September, 2012)
- lunch at the meeting place

Technical facilities
Facilities will be available for computer presentations and overhead projections. A slide center with PC (Windows and Mac) will be available to check and pre-view presentations. Speakers are requested to give a copy of their presentation on USB memory stick, CD or DVD to the technicians at the slide centre, at least one hour before the session.

Opening hours:
Monday, September 03\textsuperscript{rd}, from 07.30 a.m. to 05.30 p.m.
Tuesday, September 04\textsuperscript{th}, from 08.00 a.m. to 01.00 p.m.
Wednesday, September 05\textsuperscript{th}, from 08.00 a.m. to 04.00 p.m.

Lunches and coffee breaks
Lunches and coffee breaks will be served in the Meeting area.

Abstracts book
Participants will receive the Abstract book at the Meeting.

Certificate of attendance
The certificate of attendance will be provided.