4th International Symposium on Non-neuronal Acetylcholine
3rd Annual Meeting of the LOEWE Research Focus Non-neuronal Cholinergic Systems

Justus-Liebig-University, Giessen, Germany
August 28-August 30, 2014

Local Organizing Committee and International Program Committee

Local Organizing Committee

Wolfgang Kummer (Chair), Giessen
Martin Diener, Giessen
Veronika Grau, Giessen
Jochen Klein, Frankfurt
Katrin S. Lips, Giessen
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Charles J. Kirkpatrick, Mainz, Germany
Herman Meurs, Groningen, Netherlands
Ignaz Wessler, Mainz, Germany
Thursday, August 28, 2014

14:00  Registration opens
18:30 – 18:45  Welcome address
Joybrato Mukherjee, President of the Justus-Liebig-University Giessen
18:45 – 19:00  NNCS in Giessen
Wolfgang Kummer, Chair of the Local Organizing Committee
19:00 – 19:45  Opening Keynote Lecture:
Connections of Non-neuronal Acetylcholine to Cancer
Sergei A. Grando, USA

Friday, August 29, 2014

Novel ligands from lower animals and bacteria

08:30 – 09:00  Non-neuronal acetylcholine in honey bees and possible implications for the non-neuronal cholinergic system in humans.
Ignaz Wessler, GER
09:00 – 09:30  Phosphocholine-modified macromolecules and canonical nicotinic agonists inhibit ATP-induced IL-1beta release from human monocytes via CHRNA9.
Veronika Grau, GER
09:30 – 09:45  Phosphocholine (PC)-containing antigens from the parasite Ascaris suum as potential ligands of cholinergic receptors.

9:45 – 10:15  Coffee break

Epithelial barrier

10:15 – 10:45  Role of lynx1 and related Ly6 proteins as modulators of cholinergic signaling in normal and neoplastic bronchial epithelium
Eliot Spindel, USA
10:45 – 11:15  Mechanisms of impaired wound healing and antimicrobial responses by epidermal nicotinic receptors.
Katherine A. Radek, USA
11:15 – 11:30  The cholinergic system is affected in atopic dermatitis and in response to acute experimental stress both in men and mice.
Peters EMJ, Kupfer J, Wiegand S, Raghavan B, Urban AL, Niemeier V, Kummer W, Gieler U, GER
11:30 – 11:45  IL-22-mediated transcriptional control of SLURP-1 and SLURP-2 in skin disorders.
Moriwaki Y, Kubo N, Ishii T, Kose K, Kawashima K, Misawa H, JPN
11:45 – 12:00  Bitter triggers acetylcholine release from polymodal urethral chemosensory cells and bladder reflexes.
Lunch

12:30 – 14:00 Poster session 1 Cholinergic receptors

14:00 – 14:45 Keynote Lecture Muscarinic acetylcholine receptors: Novel opportunities for drug development
Jürgen Wess, USA

14:45 – 15:00 Nicotinic acetylcholine receptors in mitochondria: subunit composition, function and signaling pathways.
Maryna Skok, Ukraine

15:00 – 15:15 Alteration in bone microarchitecture of female M3 muscarinic acetylcholine receptor knockout mice.

15:15 – 15:30 Possible role of acetylcholine in corneal stroma wound healing in the eye.
Sloniecka M, Le Roux S, Backman L, Danielson, SE

Coffee break

Immunity and inflammation

16:00 – 16:30 Expression and function of non-neuronal acetylcholine in immune system.
Koichiro Kawashima, JPN

16:30 – 16:45 Expression and regulation of the non-neuronal cholinergic system in osteoarthritis and rheumatoid arthritis.
Beckmann J, Schubert J, Dittmann N, Morhenn HG, Schnettler R, Lips KS, GER

16:45 – 17:00 Occurrence of a non-neuronal cholinergic system in necrotic and regenerative processes in skeletal muscles in experimental studies on marked overuse
Spang C, Forsgren S, SWE

17:00 – 17:15 Further proof of the existence of a non-neuronal cholinergic system for human tendon cells: There are machineries for not only ACh production but also ACh degradation and a presence of the AChRα7 receptor.
Forsgren S, Andersson G, Alfredson H, SWE

19:00 Congress Dinner
Saturday, August, 2014

Heart
08:30 – 09:00  The fundamental significance of non-neuronal cardiac acetylcholine in terms of the pathophysiological conditions.
Yoshihiko Kakinuma, JPN
09:00 – 09:30  Regulation of cardiac function by non-neuronal acetylcholine.
Marco Prado, CAN
09:30 – 09:45  BChE is an important part of ventricular cholinergic system.
Kucera M, Krejci E, Hrabovska A, SLO and FRA

Coffee break

Respiratory system
Loes E. Kistemaker, NL
10:45 – 11:15  Nicotinic acetylcholine receptors in lung development and disease.
Mohan Sopori, USA
11:15 – 11:30  Muscarinic rather than nicotinic acetylcholine receptors mediate the effect of luminal Ach on ion transport in porcine tracheal epithelium.
Dittrich NP, Kummer W, Fronius M, GER and NZL
11:30 – 11:45  Tiotropium attenuates IL-13-induced goblet cell metaplasia of human airway epithelial cells.
Gosens R, Hiemstra PS, Bouwman S, van den Berge M, Hylkema MN, Meurs H, Kerstjens HAM, Kistemaker LEM, NL
11:45 – 12:00  Bitter chemosensation in the murine trachea.

Lunch

12:30 – 14:00  Poster Session II

Molecular mechanisms
14:00 – 14:45  Keynote Lecture:
From Mice to Men: the promises and challenges of microRNA regulators of cholinergic signaling.
Hermona Soreq, ISR
14:45 – 15:00  Diversity of acetylcholinesterase and butyrylcholinesterase in tissues: two enzymes dedicated to the hydrolysis of Ach.
Krejci E, Dingova D, Leroy J, Hrabovska A, FRA and SLO
15:00 – 15:15  Acetylcholine transport in peritoneum mediated by OCTN1.
15:15 – 15:30  Dysfunctional cholinergic signaling plays a causative role in neuroinflammatory degenerative disorders.
Darreh-Shori T, SWE

Coffee break
Cancer and stem cells

16:00 – 16:30  Muscarinic acetylcholine receptors as a double edged sword. Their role in tumorigenesis and in breast cancer treatment.
   Maria E. Sales, ARG

16:30 – 16:45  Non-neuronal acetylcholine is an endogenous regulator of proliferation and differentiation of Lgr5-positive stem cells in mouse gut.

16:45 – 17:00  M2 muscarinic receptor agonists interfere with the cell proliferation and survival of human glioblastoma cancer stem cells.

17:15  Closing remarks and awards

19:00  Social evening