

## Introductory Remarks to Symposium 15

## Emerging complexity and functions of microRNAs-dependent regulation in neuroscience

*Davide de Pietri Tonelli, Gerhard Schratt, Hermona Soreq and Carlos Fitzsimons, Genoa (Italy), Marburg, Jerusalem (Israel) and Amsterdam (The Netherlands)*

MicroRNAs (miRNAs) are small non-coding single-stranded RNA molecules that are rapidly emerging as a new layer of regulation in most biological pathways. Found in a wide variety of organisms, miRNAs have been shown to exert their fundamental function(s) by regulating the stability and translation of mRNAs targets. Interestingly, most known miRNAs are expressed specifically or enriched in the nervous system, and they have been involved, so far, in neuronal differentiation, physiology and survival. Further, rapidly accumulating evidence indicates crucial role(s) of miRNAs in developmental and physiological processes of the nervous system, as well as in a number of neural disorders. Thus, miRNAs hold a great therapeutic potential, which remains unexplored in neuroscience. The purpose of the mini-symposium is to shed light on key concepts, mechanisms and challenges for the functional investigation of miRNAs in the framework of neural system development and physio-pathology, and their potential therapeutic exploitation in neuroscience. Our mini-symposium will integrate knowledge of miRNA biology and regulation in neural development, plasticity, and disease. The mini-symposium will also focus on novel emerging aspects of miRNAs-dependent regulation in neuroscience. In particular the proposed talks will highlight challenging concepts such as, cross talk of miRNAs with long noncoding RNAs, miRNA functions independent of their canonical biogenesis pathway and cooperativity between different miRNAs. Thereby, our mini-symposium will introduce a broad audience of neuroscientists into key concepts and facts that are currently essential to understanding miRNA biology and their function(s) in complex processes such as brain development, adult neurogenesis, plasticity, behavior and neural disorders.

## Symposium 15

*Thursday, March 23, 2017  
14:30 - 16:30, Lecture Hall 101*

Chairs: Davide de Pietri Tonelli, Gerhard Schratt, Hermona Soreq and Carlos Fitzsimons, Genoa (Italy), Marburg, Jerusalem (Israel) and Amsterdam (The Netherlands)

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| 14:30 | <b>Opening Remarks</b>  |
| 14:40 | Hermona Soreq, Jerusalem, Israel<br>LONG NON-CODING PSEUDOGENE<br>TRANSCRIPTS COMPETE WITH MRNAS THAT<br>SHARE MICRORNA RECOGNITION ELEMENTS<br>WITH THEM IN HUMAN BRAIN NEURONS<br>(S15-1) |
| 15:05 | Gerhard Schratt, Marburg<br>miRNA FUNCTION IN SYNAPSE DEVELOPMENT<br>AND PLASTICITY (S15-2)   |
| 15:30 | Carlos Fitzsimons, Amsterdam, The Netherlands<br>TWO IS BETTER THAN ONE. COOPERATIVE<br>GENE REGULATION BY MICRORNAS IN NEU-<br>RAL STEM CELLS (S15-3)                                      |
| 15:55 | Davide De Pietri Tonelli, Genoa, Italy<br>DISSECTING ALTERNATIVE PATHWAYS AND<br>FUNCTIONS OF THE MICRORNA BIOGENESIS<br>MACHINERY IN MAMMALIAN NEUROGENESIS<br>(S15-4)                     |
| 16:20 | <b>Concluding Remarks</b>   |