Over the past decade, important findings in retrotransposon biology have challenged the concept of static neuronal genomes. In particular, the retrotransposon LINE-1 (L1) was shown to be active in the brain, resulting in genome alterations. The L1 retrotransposon is a DNA element, which can mobilise or “jump” from one place in the genome by first copying itself into RNA and then reverse-transcribing and inserting itself in a new genomic location. As a result, L1 mobilisation potentially alters the activity of genes where it relocates, changing the genomic landscape and creating a new layer of diversity in the cells. I will discuss recent results on retrotransposon activity during early neurodevelopment and in adult neurogenesis, as well as its regulation in neurons in response to stimuli. I will also present new approaches to identify L1 retrotransposon insertions in the mammalian brain and discuss the significance of retrotransposons for brain development and neurological function, highlighting the potential implications of this phenomenon in neuropsychiatric and neurodegenerative conditions.

Selected Publications


Friday, 14th September 2018 at 11:00 am
Life & Brain, Lecture Hall
Sigmund-Freud-Str. 25, 53127 Bonn

Retrotransposition in the brain, implications for neural diversity and neuronal plasticity

Gabriela-Oana Bodea, Dr.
Mater Research Institute, Queensland Brain Institute, University of Queensland, Australia

Host contact: Prof. Dr. Sandra Blaess
email: sandra.blaess@uni-bonn.de