

## 2<sup>nd</sup> International Conference on Epilepsy & Treatment

October 20-21, 2016 Rome, Italy

### GABA<sub>A</sub> receptor function and its implications in normal and pathologic developing brain

Eleonora Palma

University of Rome "Sapienza", Italy

Neurotransmitter receptors have fundamental roles during physiological development, as a complex interplay between glutamatergic and GABAergic systems takes place throughout maturation. In particular, it is now a well-established notion that brain development is promoted by a peculiar action of GABA current that contributes to enhance neuron growth and synapse formation. Furthermore, there is a strong time-dependent expression of all the actors of the GABAergic transmission (namely its subunits, the cation-chloride-cotransporters, its accessory proteins), which is responsible of the modifications of the receptor function observed during maturation. The meaning of GABA<sub>A</sub> receptor developmental changes has not been fully understood yet, but several studies have pointed out that an immature state of the GABAergic system can be found in different development-impairing pathologies such as focal cortical dysplasia, tuberous sclerosis complex (TSC) and Down syndrome. Additionally, subjects affected by the aforementioned conditions suffer from different neurologic complications, and among them epilepsy is one of the most common and frequently very difficult to treat, due to the marked drug-resistance associated with neurological malformations. Therefore, these observations not only support the hypothesis that the phenotypes of neurodevelopmental pathologies could depend on the contribution of altered receptor function, but also could pave the way for novel therapeutic approaches.

#### Biography

Eleonora Palma has completed her PhD in Biophysics in 1996 at University of Rome Sapienza, and she was a Post-doc Fellow at University of Geneva. She is Associate Professor of Physiology at University of Rome, Faculty of Pharmacy and Medicine. She is a Physiologist with a special interest in neurological diseases. Recently, she studied the GABAergic dysfunction in human epilepsies using different electrophysiological approaches and focused her interest on the role of neuroinflammation in human and experimental epilepsies. Thanks to different national and international collaborations, she published more than 50 papers in international peer-reviewed journals.

[eleonora.palma@uniroma1.it](mailto:eleonora.palma@uniroma1.it)

#### Notes: