

## **Alterations in brain functional networks and structure following RhoGTPases pharmacological modulation by using rs-fMRI and DTI**

Taljinder SINGH - *Istituto Superiore di sanità*

The RhoGTPases proteins have emerged as pharmacological targets to treat neurodegenerative and neurodevelopmental disorders. The goal is to evaluate the effects of both ROCKs inhibition (with the administration of fasudil) or RhoGTPases activation (with CNF1) in brain function and structure on healthy, aged CD-1 male mice by using resting state functional Magnetic Resonance Imaging (rs-fMRI) and Diffusion Tensor Imaging (DTI). The study showed alterations in functional brain networks (measured by rs-fMRI) and in the structure (measured by DTI) between treated and controls animals. Three functional networks have been identified in rodents brain corresponding to human Default Mode Network (DMN), Salience Network (SN) and Executive Control Network (ECN). These results indicate that the DMN is the main target for RhoGTPases mediated effects.