

## **The role of Magnetic Resonance Spectroscopy (MRS) in the evaluation of the effects of Rho GTPases's modulation on CD1 mice**

Valentina ZECCA - *Istituto Superiore di sanità*

Rho GTPases modulation are associated with age-related cognitive disorders. Our aim was to evaluate through <sup>1</sup>H-MRS, the effects of two treatments, fasudil and CNF1, that differently modulate Rho GTPases's. After treatment with fasudil or CNF1 (for three months in drinking water and icv, respectively), spectra were acquired from 3 regions: prefrontal cortex, hippocampus and cerebellum. In the younger mice (5 month), we detected an increase of glutamate concentration in the prefrontal cortex of fasudil-treated mice, of total choline content in all the examined regions and of total creatine in the cerebellum, compared to their controls. In the "old" group (18 month) we detected a decrease of total choline and glutathione in the prefrontal cortex in the fasudil-treated mice. In the hippocampus, the CNF1-treated group had an increase in glutamine and the signal at 0.9 ppm (mainly due to macromolecules). In the cerebellum we measured an increase in glutamate in the fasudil-treated animals compared to the controls. Data show an involvement of Rho GTPases's pathway on ageing process.