Report LS-2431

In the experiment LS-2431we use X-ray Phase-Contrast nano-Tomography (XPCnT) to investigate 3D damage in the Vascular and Neuronal Networks in EAE, an experimental model for multiple sclerosis, with and without mesenchymal cells (MSC) treatment.

A deficit in the Capillary-Network, has been successfully detected at a pre-chronic phase of the disease. We succeeded in measuring the alterations in the VN and NN and we also demonstrated the protective action exerted by the MSC preventively administered. In particular, we showed that the attack to myelin and neurons also appears to be reduced by MSC administration.

Thanks to the achieved excellent 3D image quality, these findings provide new insights in EAE disease and MSC treatment going beyond the current knowledge.
However, since this was our first experiment at ID16A, the sample preparation was not optimized and we loose some times for the sample alignment. As a consequence we did not succeeded to measure the control samples and samples with different time-points of the disease in order to describe the alterations caused by the EAE as well as the role of the MSC treatment, at different stages of the disease.

We will submit a new proposal to perform this measurement, and we will prepare the samples exploiting the experienced gained during the experiment.