EVIDENCE FOR ALTERATIONS IN LIPID PROFILES AND BIOPHYSICAL PROPERTIES OF LIPID RAFTS FROM SPINAL CORD IN AMYOTROPHIC LATERAL SCLEROSIS

Mario Díaz, Noemí Fabelo, M. Virginia Martín, Guido Santos and Isidre Ferrer

Key messages

- ❖ The lipid matrix of multimolecular membrane complexes named lipid rafts are altered in human the spinal cord in Amyotrophic Lateral Sclerosis (ALS).
- ❖ Lipid rafts from ALS spinal cord contain higher levels of n-6 LCPUFA (but not n-3 LCPUFA), n-7/n-9 monounsaturates, and lower saturates-to-unsaturates ratio.
- ❖ Paralleling fatty acids ALS lipid rafts display increased contents of cholesteryl esters, anomalous anionic-to-zwitterionic phospholipids and phospholipid remodelling, and reduced sulphated and total sphingolipids levels, compared to control lipid rafts.
- ❖ Destabilization of the lipid structure of lipid raft, affect their biophysical properties and lead to more fluid – less viscous membrane microdomains.
- ❖ The changes in ALS lipid rafts are unlikely related to increased oxidative stress, but to anomalies in lipid metabolism and/or rafts membrane biogenesis in motor neurons