Proteins responsible for neurodegenerative diseases

Significant links between prion diseases and disorders like Parkinson's and Alzheimer's have been discovered

GIUSEPPE LEGNAME

Prion diseases are neurodegenerative, incurable and deadly diseases, that essentially depend on the modification of a protein that undergoes an abnormal folding, changes its shape, becomes infectious and definitely causes the disease, although it is not associated with viruses or bacteria, as is the case in most infections.

But are there similarities between this type of pathology and other more common forms of dementia, such as Parkinson's disease and Alzheimer's disease? This has been the main focus, over the past three years, of the work of the European consortium, protagonist of the EU Joint Programme - Neurodegenerative Disease Research (JPND) "REfrAME," coordinated by the prion biology laboratory of the International School of Advanced Studies (SISSA) of Trieste. A work that is providing very important results. "We are at the final stage, the European Union is asking us to present the results in Brussels in November - Professor Giuseppe Legname of SISSA, project manager, explains - and I have to say that the scientific production has been excellent, also thanks to the fact that the consortium is composed of the best researchers in this field in Europe, who have accepted with enthusiasm our proposal to participate in the project." A partnership that has provided a fundamental answer to the main question: there are actually different forms of proteins that are involved also in Alzheimer's or Parkinson's, and that show numerous similarities with the prion protein. "For example, we have identified the structure of several proteins, called Tau, involved in Alzheimer's disease, - Legname continues - but our research has brought significant results in other areas too, and this will certainly provide the basis for further studies in the coming years." This series of scientific successes remains basically the main inheritance of the project: unfortunately, no direct continuation is planned, and the status of the financial support for the research does not seem to promise any further steps in this regard by SISSA, once the funding for the JPND "REfrAME" project is closed. ■