CA21115 - Iron-sulphur (FeS) clusters: from chemistry to immunology (FeSImmChemNet)

Description

FeS clusters are the oldest biological cofactors. They play a role in various cellular processes, in all steps of the innate immune response to pathogens and the replication process of many viruses like SARS-CoV-2. Consequently, understanding the chemistry and biology of FeS clusters is essential for understanding the mechanism of cell development, the functioning of the immune response to pathogens, and the viral replication process. To elucidate the roles of FeS clusters and proteins in these processes and use the fundamental knowledge for developing therapeutics, the Action aims to build a coordinated effort applying multidisciplinary approaches combining stem cell biology, immunology and virology, metabolomics, bioinorganic chemistry, and computational and medicinal chemistry. The resulting knowledge will reveal new therapeutic targets or approaches to treating many human diseases, including viral infection, neurodegeneration and cancer. Bridging these fields is not possible without access to a Network, where experts in these fields can share their findings, exchange ideas, and develop new research agendas and projects.

This Action aims to coordinate a multidisciplinary pan-European Network to address the challenges, bringing together the required expertise across Europe. The Action will create a unique opportunity to develop new joint research projects, build knowledge utilization activities, access facilities and infrastructure, and support next-generation leaders and scientists. It is expected that in the long-term, the S&T activities of the Action will generate new translational research and development to help Europe lead the path towards treating infectious diseases like COVID-19.

Action keywords

FeS biogenesis - FeS enzymes - Immune response - Spectroscopy - Metabolomics and proteomics

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