

Donostia welcomes world leaders in nanomedicine

From 25 to 27 February, Donostia will be hosting the SAHMN 2026 scientific congress, organized by the research center in biomaterials CIC biomaGUNE

The latest advances in smart, self-assembling materials with biomedical applications will be explored in the course of the event

Donostia. 25 February, 2026. The international congress on nanomedicine [SAHMN 2026](#) (Self-Assembled Hybrid Materials in Nanomedicine: From Non-Viral Vectors to Cancer Therapy and Neurostimulation), organized by [Dr Sergio Moya](#), researcher and leader of the group at the CIC biomaGUNE research center, will be taking place from 25 to 27 February.

The scientific event will be bringing together international experts in materials sciences, chemistry, biology, biomedical engineering and biophysics to share, at the Miramar Palace, the latest results of their research with applications in biomedicine. "The latest advances in gene therapy technologies will be reported on, and we will be exploring how these innovations can shape the future of cancer treatment," explained Moya.

Over the three days there will be presentations of various research projects featuring some focused on the development of cancer therapies based on supramolecular gene vectors using polymers, cancer therapies based on bacteria modified with polymers, neurostimulation with nanomaterials, and the development of synthetic blood with nanoparticles containing hemoglobin nuclei.

A revolutionary approach to cancer treatment

In this context, the results of the [SUPRO-GEN](#) project, focused on designing new gene vectors for cancer therapies, will be shared. This project, led by Dr. Moya, has been funded by [European funds](#) within the framework of the Marie Skłodowska Curie 'RISE' action for Research and Innovation Staff Exchange, which aims to strengthen international cross-sector collaboration in R&D&i through exchanges of research and innovation staff between public and private bodies in order to better address global challenges.

The SUPRO-GEN project, which has taken four and a half years and has involved collaboration between different universities and research centers in eight countries, sought to design "new polymeric vectors with low toxicity and high efficacy for gene therapies to combat cancer and offer an alternative to the viral vectors routinely used in this type of therapy", said the CIC biomaGUNE researcher. "We're talking about a revolutionary approach to cancer treatment."

Gene therapies entail stopping or altering the expression of a specific gene and can be used in various types of cancer. If gene therapies are to reach cells and perform

their function, they must be inserted into a kind of vehicle that protects them and helps them reach their destination. In biology, these vehicles are known as vectors.

The most common are viral vectors, which make use of the shell (capsid) of a virus. Although they are highly effective, viral vectors pose some disadvantages that make it necessary to continue to explore other alternatives. For example, their load capacity is limited, they are difficult to produce on a large scale, and can cause unwanted genetic changes.

Non-viral vectors, on the other hand, are less effective in their ability to deliver gene therapy to cells, but they are safer, less expensive to produce, and offer more options for modification. In this respect, the SUPRO-GEN project has constituted a step forward in the development of new vectors using different materials, the properties of which will continue to be explored.

About CIC biomaGUNE

The Center for Cooperative Research in Biomaterials [CIC biomaGUNE](#), member of the Basque Research and Technology Alliance ([BRTA](#)), is a not-for-profit research center located in Donostia that conducts state-of-the-art research at the interface between Chemistry, Biology and Physics, devoting particular attention to studying the properties of biological nanostructures at the molecular scale, and their biomedical applications. It was recognized in 2018 as a “María de Maeztu” Unit of Excellence for meeting requirements of excellence, which are characterized by a high impact and degree of competitiveness in its field of activity on the global scientific stage.