



Innovative design and implementation of next-generation Point-of-Care CAR-T (InnoCAR-T)

InnoCAR-T is a Doctoral Network advancing CAR T cell immunotherapy through cutting-edge gene editing and nanotechnology, bridging academic research with industrial practices to create next-generation treatments.

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1. Describe your project through three key words / key phrases that identify it.

Our project focuses on the forefront of CAR-T cell therapy, emphasizing point-of-care manufacturing, lentivirus applications, and advanced gene-editing techniques. It aims to innovate academic Advanced Therapy Medicinal Products (ATMP) manufacturing concepts and develop next-generation academic CAR-T treatments designed to counteract tumor-induced immune suppression.

In terms of impact, what are the most concrete results your project has or will achieve?

There is a way to get immune cells to fight cancer. Chimeric antigen receptor (CAR) T-cell therapy collects the T cells from the patient and makes a small change to the cells. These specially altered T cells fight cancer. InnoCAR-T is a Doctoral Network (DN) designed carry out breakthrough research on the rapidly expanding and high impact field of CAR-T cell immunotherapy. As tangible result, the programme will develop innovative CAR-T concepts, including state-of-the-art gene editing and nanotech-based drug delivery, that will yield a next-generation of CAR-T immunotherapeutics. In addition, InnoCAR-T implements these innovations in tailored manufacturing solutions with the aim of facilitating and driving local academic production and rapid clinical translation.

2. Please describe your project overall impact at the European level

InnoCAR-T aims to revolutionize CAR-T cell therapy across Europe by developing advanced academic CAR-T products that overcome existing limitations, providing affordable and curative treatments directly within local academic hospitals. This initiative significantly advances Point-of-Care manufacturing, aiming to make CAR-T therapy more accessible and cost-effective throughout Europe. Central to this project are industrial partners, offering vital knowledge for turning scientific breakthroughs into commercial products, and inter-sectoral collaborations that enhance doctoral training and foster long-term partnerships between academia and industry. InnoCAR-T is also dedicated to training the next generation of scientists, preparing them to lead in both academic and industrial spheres with innovative ideas.

3. As an applicant, what advice would you have wanted in the Horizon project design process? What support did you receive from National Contact point (NCP) and your organisation, and what improvement of support would you benefit from?

We've found the organizational support to be satisfactory, and it presents a promising avenue for involvement in new Horizon Europe projects.