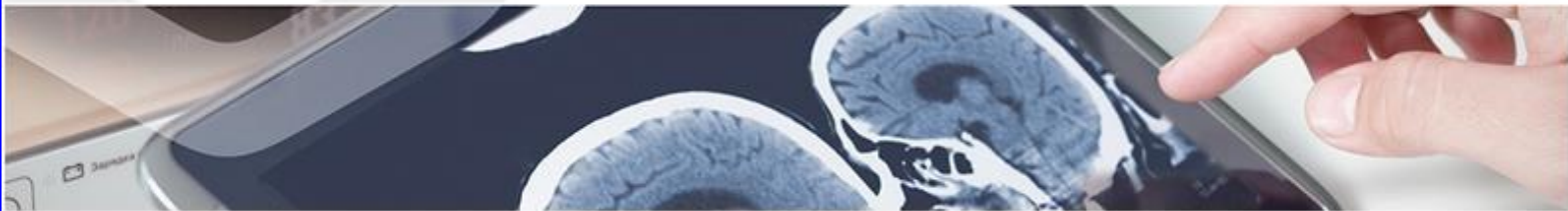


Therapy

Development of Modular and/or Reversible Chimeric Antigen Receptors (CARs) Mediated by Inteins.

A research group from the Institute of Biomedical Research and Innovation of Cádiz (INiBICA) has developed a methodology describing the assembly of modular Chimeric Antigen Receptors (CARs) using inteins.

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Description

Split inteins (SI) are enzymes that interact in pairs, enabling the fusion of proteins or protein fragments. By fusing genes encoding protein domains of interest with those encoding complementary inteins, we can promote the seamless assembly of these domains. Conversely, inserting an intein between two domains allows their separation upon the addition of the complementary intein.

In this invention, we propose utilizing these inteins to enhance industrial processes that remain inadequately addressed, including:

- The development of modular Chimeric Antigen Receptors (CARs) capable of simultaneously expressing multiple recognition domains that target different antigens, improving the elimination of tumor cells that stop expressing a particular antigen.

- A method to evaluate different recognition (or activation) domains without the need to express entire molecules.

A technique that enables the removal of active domains from a molecule through the exogenous administration of inteins (such as eliminating the recognition domain in CARs).

- A strategy to modulate CAR activity by allowing the removal of its recognition domain in response to its own activation.



Advantages

1. Facilitates the development of modular CARs by regulating the assembly of recognition domains, while also enabling their reversibility for immediate activation blockage.



Intellectual/Industry Property

This technology is protected by a patent application



Aims

Collaboration is sought for the development and exploitation of the technology.



Classification

Category: Therapy

Area: Biotechnology, Health.



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