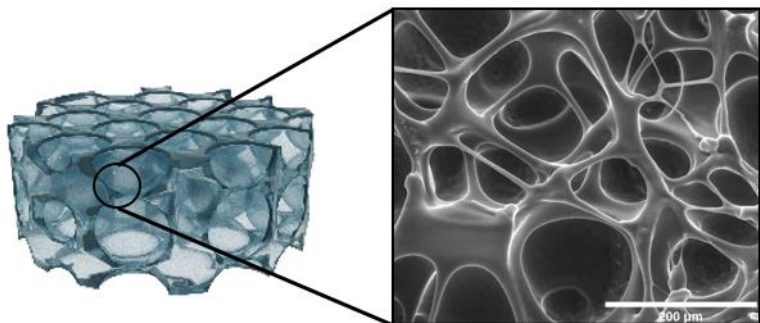


Technology Offer

CSIC/AF/024

Hydrogel for its use in CAR-T Therapy



Novel Hydrogel with optimized mechanical and structural properties to resemble artificial lymph nodes and improve primary human CAR-T cell manufacture.

Intellectual Property

Priority patent filed

Stage of development

Technology validated in the laboratory

Intended Collaboration

Licensing and/or co-development

Contact

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Market need

Adoptive cell therapy (ACT) is a novel immunotherapy against cancer. Chimeric antigen receptor CAR-T therapy is a promising ACT. T cells are harvested from the patients and are genetically modified to express an artificial receptor, the CAR, that selectively targets cancer cells. T cells are expanded *ex vivo* and re-infused in the patient to destroy cancer cells.

Gold standard *ex vivo* expansion methods cannot mimic the proliferation and activation of T cells that occurs *in vivo* in the lymph nodes. A major challenge in CAR-T therapy is to manufacture large amounts of persistent therapeutic T cells.



Proposed solution

This novel hydrogel has mechanical and structural properties that mimic the lymph nodes, which enhanced CAR expression and T cell proliferation. That is crucial, because CAR T ACT needs a sufficient expansion of cells, but also to ensure that as many cells as possible are expressing the CAR receptor.

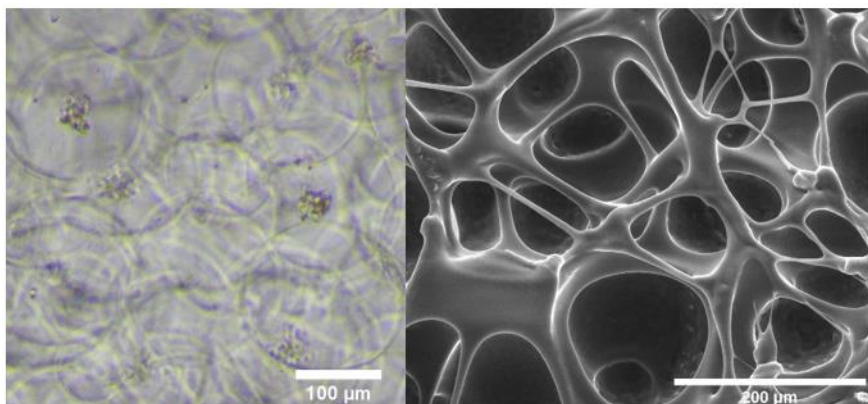
Competitive advantages

- Production of CAR T products with a higher number of cells expressing CAR receptors.
- Reduction of the time needed to obtain sufficient cells for the treatment.
- Easy-to-produce and easy-to-handle material.

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