Hydrogel For Engineered Immune Response

Tech ID: 30018 / UC Case 2016-788-0

SUMMARY

UCLA researchers in the Department of Chemical and Biomolecular Engineering have developed a novel biomaterial that can be used as a therapeutic for cancer, wound healing and other diseases.

BACKGROUND

Immunotherapy, the modulation of immune response to drive tissue-specific expression has tremendous potential as a therapeutic for malignant cancers and for wound healing. It can also be used for vaccination. However, such an approach requires an immune modulator that can cause a local, sustained immune response without side effects and is not prone to clearance.

INNOVATION

UCLA researchers have developed a novel biomaterial with immune-modulatory properties. Their approach is based on a solid hydrogel with chemically cross-linked immune modulators. It is not prone to clearance and is stable for long time periods ensuring a sustained immune response. Their initial proof of concept experiments showed an eight-fold increase in expression of immune cells around the biomaterial.

APPLICATIONS

- Immunotherapy for Malignant Tumors
- Wound healing
- Vaccinations

ADVANTAGES

- Targeted delivery of immune response modulators for reduced side-effects
- Solid immune-modulator approach is less prone to clearance

STATE OF DEVELOPMENT

Proof of concept experiments conducted in animal model systems.

PATENT STATUS

Country	Type	Number	Dated	Case
European Patent Office	Issued Patent	3439697	06/05/2024	2016-788
United States Of America	Issued Patent	10,849,988	12/01/2020	2016-788

CONTACT

UCLA Technology Development Group
ncd@tdg.ucla.edu
tel: 310.794.0558.

INVENTORS

- Segura, Tatiana

OTHER INFORMATION

KEYWORDS

Hydrogel, Immune response, Immune system, Immune modulation, Inflammation, Inflammatory response, Cancer, Wound healing

CATEGORIZED AS

- **Materials & Chemicals**
  - Biological
- **Medical**
  - Disease: Cancer
  - Therapeutics
  - Vaccines

RELATED CASES

2016-788-0