



ARTIFICIAL PROTEIN SCAFFOLDS

cTRPs: Circular Tandem Repeat Proteins

Brief Technology Description

A novel protein scaffold and functional display platform for use in human therapeutic cell systems.

BUSINESS OPPORTUNITY

Exclusive license
Sponsored research
Start-up

TECHNOLOGY TYPE

Protein/peptide

STAGE OF DEVELOPMENT

Preclinical *in vitro*

PATENT INFORMATION

Patent pending

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Technology Overview

Drs. Stoddard and Bradley have combined their expertise in protein engineering and structural modeling to engineer a novel platform technology of artificial circular protein display scaffolds. Configured unlike any proteins found in nature, and made from smaller components, these unique self-assembling scaffolds can be generated in various dimensions and sizes; and to display various functional units [a.k.a. functionalized cTRPs]. Functionalized cTRPs can facilitate [i] precise pre-organization of biologically active proteins in defined symmetric arrangements; [ii] enhanced activity on cell surfaces via increased avidity; and [iii] enhanced expression, stability and solubility. The first functionalized cTRPs will be cytokine TRPs, MHC TRPs, and stimulatory stem cell TRPs. The resulting functional cTRPs will offer reagents for stimulation, expansion, differentiation, and isolation of human therapeutic cells to facilitate cell culture and expansion under tightly-controlled conditions for the desired final biological properties.

Applications

- Cell therapy
- Cell reagents for expansion and stimulation of cells

Advantages

- Ability to display multiple functional units to increase avidity, stability, and solubility
- Reduce time and cost of manufacturing

Market Overview

The market for cell culture reagents worldwide is currently estimated to be greater than \$1.8 billion.

Investigator Overview

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