Glycoengineering Of The Foldon Protein Trimerization Domain To Shield It From Antibody Immune Responses

Tech ID: 32956 / UC Case 2021-990-0

BACKGROUND

Vaccine design is at the forefront of therapeutic development. Candidate proteins for recombinant vaccine design are expressed as soluble proteins lacking the native transmembrane domain. These proteins are often fused with multimerization domains to stabilize the native oligomeric state of the candidate protein. However, these multimerization domains can elicit off-target immune responses, raising concerns regarding risks of unintended immunogenicity. Thus, there is a need to eliminate potential off-target effects of recombinant vaccine candidates that contain multimerization domains such as the foldon domain.

TECHNOLOGY DESCRIPTION

To address this, researchers at UC Santa Cruz have developed glycoengineered foldon domains to include N-linked glycosylation motifs. Foldon domains that are glycosylated may produce a lower immune response than foldon domains that are not glycosylated, when administered to a subject.

APPLICATIONS

- vaccine design
- recombinant protein vaccines
- multimeric vaccine antigens
- trimeric vaccine antigens
- immunosilencing

ADVANTAGES

- reduces foldon immunogenicity
- eliminates off-target effects in recombinant vaccine candidates

INTELLECTUAL PROPERTY INFORMATION

Country	Type	Number	Dated	Case
European Patent Office	Published Application			2021-990
Patent Cooperation Treaty	Reference for National Filings	WO 2023/015262	03/09/2023	2021-990

Additional Patent Pending

RELATED MATERIALS

CONTACT

Jeff M. Jackson
jjackso6@ucsc.edu
tel: .

INVENTORS

- DuBois, Rebecca M.
- Dzimianski, John

OTHER INFORMATION

KEYWORDS

vaccine design, recombinant protein vaccines, foldon, immunosilencing, glycoengineering, glycosylation

CATEGORIZED AS

- **Biotechnology**
  - Health
- **Medical**
  - Disease: Infectious Diseases
  - Vaccines

RELATED CASES

2021-990-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Human Astrovirus Neutralizing Monoclonal Antibody Sequences
- Simplified Workflow For Hybridoma Antibody Sequencing
- Methods To Rapidly Measure Antibodies And Other Biomolecules In Clinical Specimens Utilizing Biolayer Interferometry

University of California, Santa Cruz
Industry Alliances & Technology Commercialization
Kerr 413 / IATC,
Santa Cruz,CA 95064

Tel: 831.459.5415
innovation@ucsc.edu
officeofresearch.ucsc.edu/
Fax: 831.459.1658