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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	4380960	06/12/2024	2021-990

Additional Patent Pending

RELATED MATERIALS

- ▶ [Structural insights into the broad protection against H1 influenza viruses by a computationally optimized hemagglutinin vaccine - 04/25/2023](#)

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OTHER INFORMATION

KEYWORDS

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

CATEGORIZED AS

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

RELATED CASES

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ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

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