

Disulfide-linked Foldon Domains To Stabilize Protein Trimers

Researchers in Dr. James Swartz's lab have developed foldon domains that can be used to stabilize protein trimers even under stressful conditions that would otherwise disassemble the trimeric structure. The ability to trimerize proteins is of great interest for biomaterial applications, such as vaccine development. Proteins such as influenza hemagglutinin naturally form trimeric structures. When used as vaccines, such trimers may disassemble before the vaccine can be administered. This technology overcomes this limitation by providing stable covalent bonds between the monomers of trimeric protein structures without affecting the conformation of the trimeric protein.

Stage of Research

The inventors have optimized the foldon monomer and folding conditions. In addition, when used with a hemagglutinin stem domain protein the correct immunogenic conformation of this stabilized HA stem trimer was obtained and confirmed.

Applications

- Vaccines
- Therapeutics
- Materials that require a trimeric protein structure

Advantages

- Stabilizes trimeric structures
- Does not affect the conformation of the trimeric protein
- Can be fused to any protein partner

- Can be C-terminal or N-terminal to the fusion partner
- Ensures high quality final protein product
- Facilitates the manufacture of trimeric protein products

Patents

- Published Application: [WO2013042229](#)
- Published Application: [20150141616](#)

Innovators

- Yuan Lu
- James Swartz

Licensing Contact

Seth Rodgers

Licensing Manager, Life Sciences

[Email](#)