



Composition and Method for Enhancing Immune Response

AzTE Case # M2-037

Inventors

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Invention Description

Most currently available vaccines consist of killed or live-attenuated pathogens delivered by injection. Despite their success in preventing disease, there are compelling conceptual technical and economical reasons to seek alternatives. Subunit vaccines that target the mucosal immune system are considered by many as such alternatives. For example recent breakthroughs suggest that vaccines can be produced in edible tissues of transgenic plants which can then be orally immunogenic. However, to be effective, mucosal subunit vaccines may need to be co-administered together with an "adjuvant" - a non-specific immunostimulatory agent that would enhance an immune response.

Researchers at Arizona State University have discovered a very potent immunostimulatory, orally-active peptide that can be used as an oral/mucosal adjuvant.

This peptide has been shown to act as a lectin to bind Galactosyl Ceramide on the surface of mucosal epithelial cells. This peptide also can functionally neutralize HIV transcytosis through epithelial cells. The immunogenicity of this peptide has been studied in mice by oral immunization of the peptide solely or together with cholera toxin B subunit (CTB). Such administration resulted in significantly higher titers of anti-CTB antibodies as compared to mice that were given CTB alone. This result is quite remarkable as it indicates that the peptide could be a novel mucosal adjuvant

Intellectual Property

Status:

Patent Pending

Potential Applications

- Vaccines
- Mucosal adjuvant

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Benefits and Advantages

- Oral ingestion
- Viable, safe, and effective alternative to injection
- Does not require medically trained personnel