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### Vaginal vaccination with DNA loaded nano-particles

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Traditional vaccines are prepared of weakened or killed forms of bacteria or viruses and they usually require needle injections by medical personnel. However, recently the focus is on DNA vaccines. It has been observed as a result of studies carried out on experimental animals that these vaccines based on recombinant DNA technology which are obtained with the help of gene engineering have provide cellular and humoral immune response. It is thought that DNA vaccines are safer than vaccines made via killed viruses. These vaccines provide immunization by administering plasmids that carry the DNA coding the antigen loaded nanoparticles directly to the target area such as muscle, skin or mucosa which results in the production of antigen in the host cell. The female genital tract has been considered a component of the common mucosal immune system. Antigen presenting cells (APCs), T cells and B cells populate cervix and vagina of the human and murine female genital tract, indicating the potential for production of mucosal immunity at the genital tract by the local application of plasmid DNA. Several studies have shown that direct application of DNA to the vaginal mucosal surface can induce secretion of IgA molecules specific to the expressed protein. The topical application of DNA vaccine to the vagina is a useful method of immunization because of its simplicity, painlessness and economy. That is why it is in question to administer DNA vaccines in carrier systems as well as their targeting studies.

### Biography

Gulay Buyukkoroglu has completed PhD from Anadolu University and Postdoctoral studies from University of London, The School of Pharmacy on transcutaneous DNA vaccination. She is head of Pharmaceutical Biotechnology at Anadolu University Faculty of Pharmacy. She is working on gene delivery systems, new cancer drug delivery systems with siRNA and specific antibodies attached drug delivery systems.

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