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## Approach toward developing perfect serodiagnostic target using *Trichomonas vaginalis* as a model

*Trichomonas vaginalis* causes the number one, non-viral sexually transmitted infection world-wide. A rapid, sensitive and accurate point-of-care serodiagnostic is needed for screening both women and men, and such a diagnostic will permit determination of the true incidence and prevalence of this STI responsible for significant adverse health outcomes. The availability of sera from women and men patients and uninfected controls allowed us to identify epitopes to immunogenic proteins of *T. vaginalis*. I reasoned that, knowledge of epitope amino acid sequences could permit the construction of novel, chimeric recombinant proteins that would be a perfect target for a serum IgG diagnostic for both women and men. The metabolic enzymes fructose-1,6-bisphosphate aldolase (A),  $\alpha$ -enolase (E) and glyceraldehyde-3-phosphate dehydro-genase (G) are immunogenic and serum IgG antibody to these proteins is detected after this STI. Some epitopes of these enzymes have little or no sequence identity to other eukaryotes, yeasts and microbial pathogens. We constructed a chimeric recombinant String-Of-Epitopes (SOE) protein consisting of 15-mer peptides within which are epitopes of A, E, and G unique to this STI agent. This chimeric protein referred to as AEG::SOE2 was detected by ELISA with highly reactive sera of women and men, but not control, negative serum lacking antibody to trichomonad proteins. This approach lends itself to the creation of highly specific immunogenic targets for detection of serum IgG antibody in patients. Given that the epitopes are highly immunogenic and elicit antibody, such targets may also be future subunit vaccine candidates.

## Biography

John F Alderete has received his PhD from Kansas University. He has completed his Post-doctoral research at University of North Carolina-Chapel Hill. He was at the University of Texas Health Science Center at San Antonio for 30 years before taking a position at Washington State University. He has published 140 scientific articles and 63 book chapters, invited articles, and press releases. His work has been presented at 158 scientific conferences. He has served in National Institutes of Health Study Sections, Boards of Scientific Counselors, National Advisory Councils and several National Academy of Medicine panels.

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