Recombinant Vaccines to Prevent Gonorrhea: Maltose Binding Protein/Gonococcal Antigenic Peptide Protein ^{MAS}

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Gonorrhea, with up to a million new cases each year, is one of the most reported communicable diseases in the United States. Of particular concern is an increasing incidence of gonorrhea infection among inner city youths. Vaccine trials using major outer membrane components of *Neisseria gonorrhoeae* have proven ineffective due to the immunogenic dominance of variable sequences in comparison to the weak immunogenicity of conserved sequences. We propose to use conserved immunorecessive sequences in a recombinant vaccine. To test that an immunorecessive invariant peptide will elicit protective antibodies, a fusion protein was constructed using the pMAL-CR1 Vector System, which fuses maltose binding protein of *Escherichia coli* with a conserved surface exposed antigenic peptide of the multiple transferable resistance 44,000 dalton protein (MtrC) of *Neisseria gonorrhoeae.* This system, which efficiently produces fusion proteins that can be purified in a single step, provides the opportunity to generate antibodies to specific, conserved, immunorecessive outer membrane peptides. Antibodies to these peptides will be used in assays to determine their ability to bind native protein and to kill gonococci. Ultimately, peptides identified in these studies will be used for immunoprophylaxis against *Neisseria gonorrhoeae.*