

## From antigen discovery to a protective fusion protein vaccine for *Chlamydia trachomatis*

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The host immune response against *Chlamydia trachomatis* is very complex and several studies in animal models indicate that in order to induce protective immunity against Chlamydia we need both a humoral and CMI mediated response (1-3). At the Statens Serum Institute we have conducted a large antigen discovery program for targets recognized by human CMI and antibodies. Almost 300 molecules have been evaluated over the last 4 years and this analysis have confirmed the immunodominance of several previously identified antigens and resulted in the discovery of novel antigens not previously described as frequently recognized. We are currently evaluating the most important hits from this discovery programme as subunit vaccines administered in cationic liposomes that induce both high levels of CMI responses as well as a strong humoral response. This evaluation is performed in the mouse model of *Chlamydia muridarum* as well as *Chlamydia trachomatis* Serovar D challenge. The most promising antigens from this evaluation are being engineered into recombinant fusion proteins. We will give an overview of the discovery programme and present recent data on the immunogenicity and protective efficacy of the fusion protein based vaccine strategy for *Chlamydia trachomatis*.

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