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| Resumo | The implementation of polysaccharide-based vaccines has massively reduced the incidence of invasive pneumococcal diseases. However, there is great concern regarding serotype replacement and the increase in antibiotic resistant strains expressing non-vaccine capsular types. In addition, conjugate vaccines have high production costs, a limiting factor for their implementation in mass immunization programs in developing countries. These limitations have prompted the development of novel vaccine strategies for prevention of Streptococcus pneumoniae infections. The use of conserved pneumococcal antigens such as recombinant proteins or protein fragments presents an interesting serotype-independent alternative. Pht is a family of surface-exposed proteins which have been evaluated as potential vaccine candidates with encouraging results. The present work investigated the immune responses elicited by subcutaneous immunization of mice with the polyhistidine triad protein D (PhtD) and its amino and carboxyl terminal fragments. The proteins were immunogenic and protective against pneumococcal sepsis in mice. Antibodies raised against PhtD increased complement C3b deposition on the pneumococcal surface, mainly mediated by the alternative pathway. Sera from mice immunized with PhtD and PhtD_Cter promoted an increase in bacterial uptake by mouse phagocytes. The interaction of PhtD with the complement system regulator factor H was investigated in silico and in vitro by ELISA and western blot, confirming PhtD as a factor-H binding protein. Our results support the inclusion of PhtD and more specifically, its C-terminal fragment in a |

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| | multicomponent serotype independent vaccine and suggests a role for the complement system in PhtD-mediated protection. |
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