The characteristics of highly immunoreactive surface proteins of *Clostridium difficile* using human sera

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Statement of the problem *Clostridium difficile* is the cause of one of the most common hospital-acquired infections (CDI), which is antibiotic-associated diarrhea, which may develop pseudomembranous colitis and toxic megacolon, which in many cases leads to death of the patient. Despite the work of many research groups, there is still no commercially available vaccine to prevent infection. **Methodology** To identify the most immunoreactive proteins, electrophoretic isolation of *C. difficile* R20291 strain proteins was performed by six different methods using Prep-Cell Apparatus (491 model Bio-Rad). Proteins were analyzed using 2D electrophoresis and immunoblotting assay with sera from human healthy adults and Polish patients with CDI. **Findings** The protein yield was dependent on isolation method and the reactivity of proteins detected by SDS-PAGE and Western blotting was heterogeneous. Four proteins with molecular masses of about 45 kDa, 65 kDa, 115 kDa and pI between 4 and 5 showed immunoreactivity features. Proteins were identified by comparative analysis of peptides masses (NCBI, UniProt databases) using MASCOT and statistical analysis. **Conclusion & Significance** Identified proteins have been proposed as vaccine candidates against CD infection.

Publications

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