

# Immunoproteomic analysis to identify shiga toxin-producing *Escherichia coli* outer membrane proteins expressed during human infection

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© 2014, American Society for Microbiology. Shiga-toxin producing *Escherichia coli* (STEC) is the etiologic agent of acute diarrhea, dysentery, and hemolytic-uremic syndrome (HUS). There is no approved vaccine for STEC infection in humans, and antibiotic use is contraindicated, as it promotes Shiga toxin production. In order to identify STEC-associated antigens and immunogenic proteins, outer membrane proteins (OMPs) were extracted from STEC O26:H11, O103, O113:H21, and O157:H7 strains, and commensal *E. coli* strain HS was used as a control. SDS-PAGE, two-dimensional-PAGE analysis, Western blot assays using sera from pediatric HUS patients and controls, and matrix-assisted laser desorption ionization-tandem time of flight analyses were used to identify 12 immunogenic OMPs, some of which were not reactive with control sera. Importantly, seven of these proteins have not been previously reported to be immunogenic in STEC strains. Among these seven proteins, OmpT and Cah displayed IgG and IgA