

## **Proteomics & ETEC vaccine development**

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An ETEC vaccine is desirable for travellers' diarrhoea prophylaxis programs. ACE BioSciences aim to develop a protein-based vaccine against ETEC as a prophylactic treatment.

Until today only genomics have utilised for the detection of ETEC virulence genes and vaccine candidates. Common targets for vaccination are CFA and LT toxin (pathotype) with little and unknown success in ETEC vaccine development. Studies in West Africa have demonstrated that natural immunity is apparently not associated with known pathotypes of surface antigens or toxins of ETEC. Today antigens conferring natural immunity are unknown, but they will be excellent candidates for ETEC vaccination.

However many ETEC specific proteins are apparently not detected with methods of genomics. They are lost for vaccination. Proteomics, however, will be an excellent alternative to find new proteins or peptides for vaccination against ETEC. ACE BioSciences technology platform is specialized for uncovering antigens on the bacterial surface. Protein antigens we identify are proven to exist on the surface of ETEC by high sensitive mass spectrometry. With these proteins we expect a high potential in protection of diarrhoea or mortality in animal models based on mice or rabbits. The vaccine candidates will be screened for expression on a variety of relevant ETEC strains or serotypes, which will guaranty a real broad-spectrum protection.

ACE BioSciences is applying its target discovery platform to identify the majority of surface exposed protein antigens in ETEC. The surface proteins are screened and validated for vaccine development and are selected based on properties providing, for example, no (structural) similarities to humans' or enteric bacteria proteins and animal efficacy studies.