IMMUNIZATION WITH SURFACE IMMUNOGENIC PROTEIN INDUCES A DECREASE OF VAGINAL COLONIZATION BY GROUP B STREPTOCOCCUS IN AN EXPERIMENTAL MOUSE MODEL

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The Group B streptococcus (GBS) is the leading cause of neonatal sepsis and meningitis in developed countries and an emerging pathogen in adults. A neonatal infection occurs predominantly during the delivery by either inhalation or ingestion of contaminated secretions of the mother’s vagina. Maternal screening by rectovaginal GBS colonization at 35–37 weeks of gestation, with subsequent intra-partum antibiotic prophylaxis (IAP) at the onset of labor, is implemented in some countries to prevent newborn invasive by GBS. Currently, there are not vaccines to prevent the devastating consequences of GBS and a glycoconjugate vaccine is under clinical experimentation (Clinical Trials Phase III).

The Surface Immunological Protein (SIP) of GBS is highly immunogenic and conserved between different serotypes of this bacterium. The SIP had been described to induce antibodies type IgG that induces protective immunity in animal model challenged intraperitoneally with GBS.

Here we describe the immunization with SIP mixed with an AbISCO-100 adjuvant in mice model challenged to GBS vaginal infection. The vaccine has demonstrated to decrease the GBS colonization in infected mouse. The SIP immunization has also increased the circulating IgA, IgG and IgG2a levels against SIP and antigen-specific circulating levels of IFN-γ and IL–2. Moreover, transfer of serum and T cells from a vaccinated animal into a non-immunized animal induced immune protection to the animals from challenged GBS colonization of the vaginal tract. In conclusion, we have demonstrated that a simple and effective vaccine is able to prevent GBS colonization, where cellular immunity plays an important role. To our knowledge, is the first report the SIP-based vaccine reduces the vaginal GBS colonization in an animal model.