Conclusion: Discordance between DTP3 coverage and seroprotection might be due to underestimating vaccination coverage by recall. Lack of long-term protection against tetanus or diphtheria is consistent with declining antibody concentrations by school-age after the primary DTP series, indicating the need for a booster dose. Seroprotection against measles and rubella viruses was lower than levels needed to prevent transmission, particularly in the West region; re-introduction of either virus could lead to an epidemic. Haiti should reach ≥95% DTP3 and two-dose MR coverage and add tetanus and diphtheria vaccine booster doses per global recommendations.

Figure 1. Vaccination Coverage and Seroprotection Among 5-7 Years Old — Haiti, 2017.

Figure 1a. Tetanus and Diphtheria Vaccination Coverage and Seroprotection Among 5-7 Years Old — Haiti, 2017.

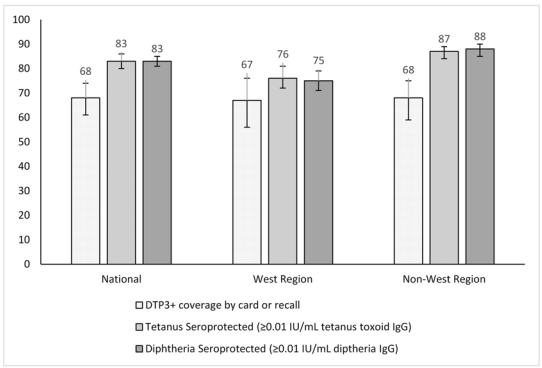
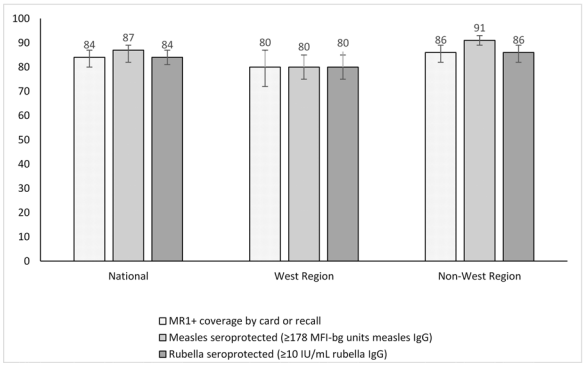


Figure 1b. Measles and Rubella Vaccination Coverage and Seroprotection Among 5-7 Years Old — Haiti, 2017.



Disclosures. **All authors:** No reported disclosures.

2772. HCMV gB Ectodomain Subunit and gB mRNA Vaccines Reduce AD-3 Immunodominance and Elicit More Durable Antibody Responses Than gB/MF59 Immunization

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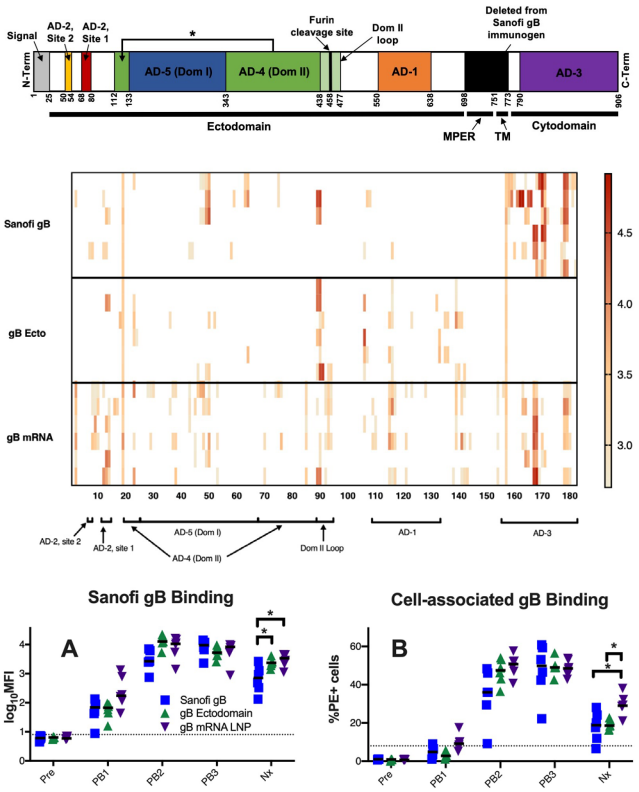
Background: A vaccine to prevent maternal acquisition of human cytomegalovirus (HCMV) during pregnancy is one potential strategy to reduce the incidence of congenital disease. The MF59-adjuvanted glycoprotein B (gB/MF59) protein subunit vaccine is the most efficacious tested to-date, though achieved only 50% efficacy in phase 2 trial. We previously identified that gB/MF59 vaccination elicited poor heterologous virus neutralization and an immunodominant response against non-neutralizing/cytosolic antigenic domain 3 (AD-3) (Figure 1). Thus, we sought novel gB vaccination strategies to improve functional antibody responses and reduce AD-3 immunodominance.

Methods: Groups of juvenile New Zealand White rabbits ($n = 6$) were administered 3 sequential doses of gB protein with an MF59-like squalene adjuvant IM, gB ectodomain protein (lacking AD-3) + squalene adjuvant IM, or lipid nanoparticle (LNP)-packaged nucleoside-modified mRNA encoding gB ID.

Results: The AD-3 immunodominant IgG response seen in human vaccinees was closely mimicked in rabbits, with 78% of binding antibodies directed against this region in the gB protein group compared with 1% and 46% in the ectodomain and mRNA-LNP-vaccinated groups respectively (Figure 2). All vaccines were highly immunogenic with similar kinetics and comparable peak gB-binding/functional antibody responses. However, both ectodomain and mRNA-LNP-immunized rabbits exhibited enhanced durability of IgG binding to gB protein ($P = 0.04$ and 0.02, respectively), and the mRNA-LNP group had more durable binding of cell membrane-associated gB ($P < 0.001$) (Figure 3). Additionally, ectodomain and mRNA-LNP-vaccinated rabbits had increased durability of antibodies targeting neutralizing epitopes AD-4 and AD-5 ($P < 0.01$). Finally, low-magnitude gB-specific T-cell activity was observed in the gB protein and mRNA-LNP groups, though not in ectodomain-vaccinated rabbits.

Conclusion: Altogether these data suggest that gB ectodomain subunit and gB mRNA-LNP vaccine formulations reduced targeting of non-neutralizing epitope AD-3 and elicited more durable IgG responses than gB protein vaccination. These next-generation HCMV vaccine candidates aiming to improve upon the partial efficacy of gB/MF59 vaccination should be further evaluated in preclinical models.



Disclosures. **All authors:** No reported disclosures.

2773. Safety and Immunogenicity Study of Eastern Equine Encephalitis Vaccine

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Background: Eastern equine encephalitis virus (EEEV) is an alphavirus with a high mortality rate and serious neurological sequelae in infected persons making this virus an important human pathogen.

Methods: Following written informed consent, eligible subjects received two priming doses of EEEV vaccine, inactivated, TSI-GSD 104, 0.5 mL subcutaneously on days 0 and 28 days followed by a mandatory booster, 0.1 mL intradermal, at 6 months. Serum samples were collected pre-vaccination, days 21–35 following dose 2, as well as before and 21–35 days after dose 3. Sera with a Plaque Reduction Neutralization Test$_{80}$ titer ($PRNT_{80}$) ≥ 1:40 were considered responders with adequate titers for the purpose of biocontainment suite entry.

Results: Sixty-seven (67) subjects were enrolled in this study to receive the primary vaccination series. All 67 subjects received at least 1 primary vaccination; 66 completed the 2 primary doses; 58 completed the 2 primary doses and the 6-month dose. Of these, 38 (56.7%) reported one or more adverse events. Fatigue was reported in 13 (19.4%), headache in 9 (13.4%), upper respiratory tract infection in 6 (9.0%), nausea in 5 (7.5%), pyrexia in 5 (7.5%), oropharyngeal pain in 4 (6.0%), myalgia in 4 (6.0%), injection site pain in 7 (10.4%), injection site hematoma in 4 (6.0%) and injection site erythema in 3 (4.5%) subjects. Adverse events were mostly mild or moderate and transient. $PRNT_{80}$ titers ≥ 1:40 was observed in 39/65 (60%) subjects who received both primary doses of EEEV vaccine compared with 48/57 (84%) subjects who completed the 2-dose primary series and the 6-month dose and also had blood drawn for titer. Females had a higher response rate (61.5%) at the pre 6-month boost titer than did males (34.3%) (p = 0.0231). Similarly, the pre 6-month boost geometric mean titer (GMT) for females