Evaluation of Serological Responses in Primed Pre-Partum Broodmares Post-Vaccination With a West Nile Virus Vaccine (Live Flavivirus Chimera)

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Vaccinating primed pre-partum broodmares with a single dose of a West Nile virus (WNV) chimeric vaccine does produce an anamestic response and can be used to boost colostral antibodies. Authors’ addresses: 160 Towne Square Park, Lexington, Kentucky 40511 (Gutierrez); Hagyard Equine Medical Institute, 4250 Iron Works Pike, Lexington, Kentucky 40511 (Brown); and University of Florida, College of Veterinary Medicine, Department of Large Animal Clinical Sciences, PO Box 100136, Gainesville, Florida 32610 (Beachboard, Long); e-mail: cvg8198@msn.com (Gutierrez). © 2009 AAEP.

1. Introduction
This study investigated the response of previously vaccinated gravid broodmares to a chimeric West Nile virus (WNV) vaccine. The three goals were (1) to show if low-titer mares responded appropriately (four-fold change in titer) during gestation, (2) to show if high-titer mares had antivector immunity to this modified-live vaccine, and (3) to confirm that this vaccine can be used in pregnant mares to induce colostral immunity.

2. Materials and Methods
On day 0, a single dose of Prevenilea was administered IM to 81 broodmares within 4–8 wk of foaling. Before vaccination, whole blood samples were obtained and allowed to clot. The serum was collected and stored until assayed. On day 21, additional serum blood samples were obtained, and paired titers were evaluated.

3. Results
Eighty-one horses had both samples obtained at 3 wk post-vaccination. All of the mares showed a significantly increased titer level post-vaccination. All mares, even if low at the first sampling, had a four-fold rise in titer, which indicates an anamestic response.

4. Discussion
This study shows that vaccinating primed pre-partum broodmares with a single dose of a chimeric WNV vaccine does produce an anamestic response, and therefore, it can be used to boost colostral immunity.

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Footnote
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