Efficacy and Duration of Immunity of an Inactivated Equine Rabies Virus Vaccine

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When vaccinated with a single 1-ml dose of a new inactivated equine rabies virus vaccine, horses developed high levels of virus neutralizing antibodies, and they were protected against disease after challenge with virulent rabies virus 14 mo after vaccination. Authors’ addresses: Intervet/Schering-Plough Animal Health, 31568 Beaver Creek Road, Paola, Kansas 66071 (Barnett); Intervet/Schering-Plough Animal Health, 35500 West 91st Street, DeSoto, Kansas 66081 (Mellencamp); Intervet/Schering-Plough Animal Health, 29160 Intervet Lane, Millsboro, Delaware 19966 (Lakshmanan); and Pfizer Animal Health, 7000 Portage Road, Kalamazoo, Michigan 49001 (Zhang); e-mail: craig.barnett@sp.intervet.com. © 2009 AAEP.

1. Introduction
The vaccination guidelines of the American Association of Equine Practitioners identify rabies as a core vaccine for horses. There are no published results regarding the efficacy of equine rabies vaccines. Published data would provide valuable information to practitioners when making vaccination recommendations and designing protocols. Using a virulent rabies virus challenge, the efficacy of a new inactivated equine rabies virus vaccine was tested in horses.

2. Materials and Methods
This study was observed by the United States Department of Agriculture as required for registration and licensure, and it was approved by the Institutional Animal Use and Care Committee (IAUCC). Twenty-one horses were vaccinated intramuscularly with a single 1-ml dose of vaccine, and 11 horses served as unvaccinated controls. Vaccinated horses were selected for challenge based on virus-neutralizing antibody titer according to 9CFR 113.209(b)(4) requirements for non-carnivores. All vaccinated horses developed high levels of rabies virus-neutralizing antibody that persisted for at least 12 mo. All vaccinated horses were protected against rabies disease after challenge with virulent rabies virus at 14-mo post-vaccination, whereas rabies disease was confirmed in 80% of unvaccinated control horses.

3. Results
All vaccinated horses developed high levels of rabies virus-neutralizing antibody that persisted for at least 12 mo. All vaccinated horses were protected against rabies disease after challenge with virulent rabies virus at 14-mo post-vaccination, whereas rabies disease was confirmed in 80% of unvaccinated control horses.

4. Discussion
Using a virulent rabies virus challenge, the efficacy of a new inactivated rabies vaccine was tested in horses. After a single 1-ml dose, horses developed high levels of virus-neutralizing antibody and were protected against disease when challenged 14-mo after vaccination.

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Reference and Footnote