

Development of a Competitive ELISA for Detection of *Leptospira borgpeterseni* serovar hardjo in Vaccinated Cattle

Frizzell C.M.^{1,2}; McCarroll J.³; Mackie D.P.^{2,3}; Ellis W.A.^{2,3}; Breadon E.³; Montgomery J.M.³; Kavanagh O.V.¹; Logan E.F.¹

¹Linnodee Animal Care, Oakmount, Holestone Road, Ballyclare, Co. Antrim, BT39 OTJ, Northern Ireland

²Department of Veterinary Science, Faculty of Agriculture & Science, Queens University Belfast, Belfast BT4 3SD, Northern Ireland

³Department of Agriculture & Rural Development for Northern Ireland, Veterinary Sciences Division, Stoney Road, Belfast BT4 3SD, Northern Ireland

Introduction

There are many reports on the use of ELISAs as tests for the detection of leptospiral antibodies, however, no test to date has been developed that has the potential to discriminate between vaccinated and naturally infected animals.

Materials and Methods

A DNA insert which encoded for a section of protein of serovar hardjo (type bovis) was cloned into a pTrcHis vector and then overexpressed in *E. coli*. The resulting recombinant fusion protein (JMC) was purified by metal affinity chromatography. Expression

of the protein was confirmed by western blotting with anti-JMC specific monoclonal antibodies (Mabs). A competitive ELISA (cELISA) was developed for serological testing of sera, the recombinant protein JMC was used as antigen and anti-JMC Mabs to increase the specificity of the ELISA.

Results and Conclusion

The cELISA detected cattle vaccinated with a type bovis vaccine, but not cattle vaccinated with a type prajitno vaccine. Naturally and experimentally infected cattle showed no significant reaction to the JMC protein.

Effect on *in-vitro* Cell Growth of Various Rehydrant Solutions

Jaap Verschoor, DM, PhD¹; Nicolai Agger, DVM²

¹Kuipershafen 175-176, 3311 Am Dordrecht, Holland, ²Pharmalett A/S, Profilverj 1, 6000 Kolding, Denmark

Introduction

In a controlled clinical study, the addition of Psyllium (a mucopolysaccharide derived from *Isphagula* seed shells) to a standard isotonic oral rehydrant solution (Deliver[®] with Dialine[®], Pharmalett A/S, Denmark) reduced the duration, frequency and severity of diarrhea in newborn calves. This improvement of treatment is believed to be due to prolonged transit time through the small intestine, resulting in increased absorption of glucose and electrolytes.

A new isotonic rehydrant solution (Deliver Extra, Pharmalett A/S, Denmark) was evaluated for its effect on *in vitro* cell growth. Deliver Extra is identical to Deliver[®] with Dialine[®] plus a mixture of important amino acids, including extra glutamine. Glutamine is included in Deliver Extra because it is a "limiting" amino acid that may play a role in diarrheal disease. It plays a role in maintaining mucosal integrity of the gut, and in controlled situations, glutamine has also been successful in enhancing the recovery of the damaged intestinal mucosa.