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Comparative purity of various canine Leptospira vaccines based on the concentration in bovine serum albumin

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Introduction: Bovine serum albumin (BSA), one component of culture media frequently used for vaccines manufacturing can be one of the allergens responsible for immediate-type allergic reactions post vaccination in dogs. Allergic reactions are the major pharmacovigilance reported signs in dogs given Leptospira vaccines. The study aim was to compare the quantity of BSA in various dog Leptospira vaccines.

Methodology: Four commercial vaccines from different manufacturers were used. The vaccines tested contained two (CanigenTM L, Virbac), three (Vaccine B) or four (Vaccine D and E) serovars of Leptospira. The concentration in BSA in each vaccine was determined by ELISA assay (Bovine Serum Albumin Assay, Cygnus Technologies). Statistical tests were performed using the non-parametric Dunn's test, Jmp v10 software (SAS Institute). $P<0.05$ was considered as significant.

Results: The lowest concentration in BSA was observed in CanigenTM L vaccine, with values at the low detection limit of the method used, ie 1 µg/mL. Vaccine B had a concentration in BSA above the detection threshold, i.e., 64 µg/mL. For Vaccines C and D, mean concentrations in BSA were respectively 21.9±7.6 µg/mL and 6.0±0.2 µg/mL. Significant differences could be observed between CanigenTM L vaccine and Vaccine B ($p=0.01$) and between CanigenTM L vaccine and Vaccine C ($p=0.04$).

Conclusion: The commercial vaccine containing two serovars of Leptospira, CanigenTM L, was the one with the lowest concentration in BSA, which is in line with the highest safety reported from the field. Interestingly, the concentration in BSA was not strictly correlated to the number of Leptospira serovars included in each of the vaccines, which could be explained by special filtration steps applied during the vaccines manufacturing processes. In conclusion, the vaccine containing two serovars of Leptospira, CanigenTM L remains globally purer than vaccines containing additional serovars of Leptospira, which might explain its highest safety.

Biography

Christelle Fontaine is a Medical Manager, Companion Animals, Virbac. She is involved in phase IV trials and collaboration with universities and specialists across the world. She graduated from the French Veterinary School of Maison Alfort, in Paris in 2007.

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