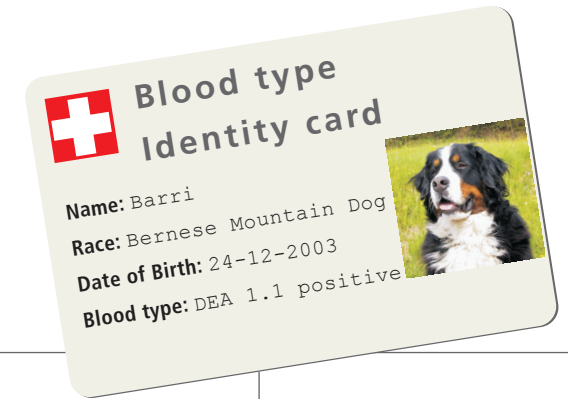




Prevalence of DEA 1.1 in dogs from Switzerland: Evaluation with a commercial gel column technique

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Introduction and Objectives

Canine blood typing has become an established and essential laboratory test due to the rising demand for safe and efficient blood transfusions. The most immunogenic and clinically important canine blood type is Dog Erythrocyte Antigen 1.1 (DEA 1.1) [1]. Little is known about DEA 1.1 frequency [2,3,4], and its distribution among canine breeds [4]. The aims of the present study were the following:

1. Determination of the prevalence of DEA 1.1 in the dog population of Switzerland.
2. Distribution of DEA 1.1 among canine breeds.

Materials and Methods

EDTA blood samples from 211 dogs treated in the small animal clinic of the Vetsuisse-Faculty, University of Zurich were used. The samples originated from 196 dogs of 34 different pure breeds and from 15 mixed breed dogs. Thirty six out of the 211 tested samples showed anaemia (PCV < 40%), in fact one dog had a PCV of 15%. Testing for DEA 1.1 was performed by a commercial gel column technique (ID-Gel Test Canine DEA 1.1, DiaMed, Cressier, Switzerland) according to the manufacturers' instructions (FIGURE 1) [1].

Results

None of the 211 blood samples showed autoagglutination. Fifty-three percent of all dogs (112/211) tested positive for DEA 1.1, 6 samples had a 2+ reaction, 70 samples had a 3+ reaction and 36 samples showed a 4+ reaction. Regarding the purebred dogs, fifty-three percent (104/196) tested DEA 1.1-positive. The prevalence in mixed breeds was identical, eight out of fifteen mixed breed dogs tested positive for DEA 1.1. The distribution of DEA 1.1 among selected breeds is shown in FIGURE 2. All Bernese Mountain dogs (18) and all Rottweiler (5) were positive for DEA 1.1 whereas all Boxer (7), Flat Coated Retriever (7) and Tervueren (6) reacted negative. In all cases, reading and interpretation of the anaemic samples was performed without any problems.

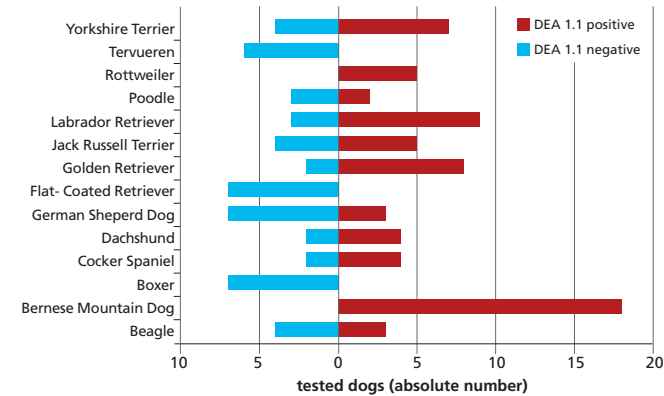


FIGURE 2. Distribution of DEA 1.1 among selected breeds in Switzerland.

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FIGURE 1. ID-Gel Test Canine DEA 1.1 (DiaMed AG, Cressier sur Morat, Switzerland)

Discussion and Conclusion

1. The prevalence of DEA 1.1 in the whole dog population of Switzerland is 53% and comparable to that reported for the United States, Brazil, South Africa and Germany (FIGURE 3).
2. In agreement with previous reports, considerable differences could be found among breeds. Knowledge of breed differences may be useful for efficient selection of DEA 1.1 negative blood donors in transfusion medicine.
3. The ID-Gel Test Canine DEA 1.1 was found to be a reliable blood typing technique for DEA 1.1 typing in a clinical laboratory.

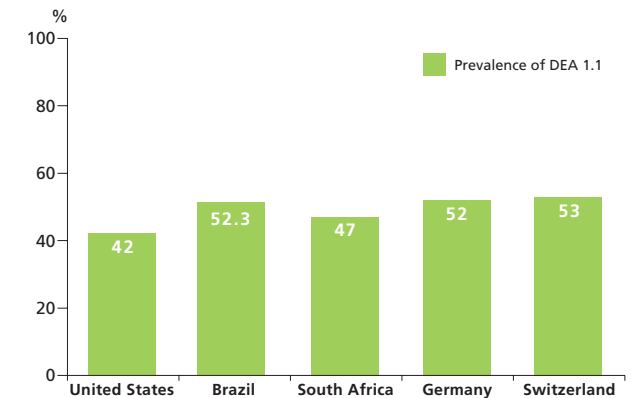


FIGURE 3. Comparison of the prevalence of DEA 1.1 in several countries.

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