

# STUDIES ON DOG ERYTHROCYTIC ANTIGEN 1 IN TWO DOG BREEDS IN KERALA

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The present study was conducted to investigate the presence of dog erythrocytic antigen 1 (DEA 1) in breeds, Pug and Dachshund in Kerala, India. Blood samples were collected from sixty dogs belonging to Pug and Dachshund breeds and subjected to immunochromatographic studies. The results elucidated presence of DEA 1 in 90% of the Pugs. were positive for DEA 1. However, 76.67% Dachshunds had DEA 1. The findings revealed that the DEA 1 positive dog population in the area studied was considerably high.

**Keywords:** Dog erythrocytic antigen, Pug, Dachshund.

Identification of blood groups in dog population in different parts of the world is an ongoing process (Carli *et al.*, 2017). The accepted terminology to describe blood groups in canines is dog erythrocytic antigen (DEA). The system consists of DEA 1, 3, 4, 5, 6, 7, 8 and various subgroups. The DEA 1 system consists of 2 alleles DEA 1.1 and 1.2 and most probably DEA 1.3 (Kessler *et al.*, 2010) also. Dog erythrocytic antigen 1 is highly antigenic and therefore typing to ascertain the DEA 1 status before blood transfusion is of great importance. A previous preliminary study had ascertained

the DEA 1 status of five dog breeds of the area (Unny *et al.*, 2014).

## Materials & Methods

Sixty dogs of either sex, 30 each from the two breeds, Pug and Dachshund presented to the University Veterinary Hospitals were selected. Two ml of blood was collected from all animals into EDTA coated vials with consent of owners.

**Immunochromatographic DEA 1 study:** Typing of DEA 1 was carried out using laboratory test kit of Alvedia, France, following the standard procedure (Fig.1.).



Fig. 1. DEA 1 negative and positive results by immuno-chromatographic method

## Results & Discussion

Among 30 Pugs screened 90% were positive for DEA 1. The DEA 1 positive Pugs were of either sex with 16 females and 11 males. All the 3 DEA 1 negative animals were females. Study involving Dachshunds revealed 76.67% (23/30) DEA 1 positive cases. Out of the 23 DEA 1 positive Dachshunds, 9 were females. In the DEA 1 negative Dachshunds (7/30), 4 were females and 3 were males.

The DEA 1 typing of Dachshunds and Pugs exhibited an alarming high percentage of DEA 1 positive animals. Similar results were observed in a previous study of five other dog breeds of the area had revealed a high percentage of DEA 1.1 as also reported by Unny *et al.*, 2014, and prevalence of DEA 1.1 was found to be very high in another study at Zimbabwe by Dhilwayo *et al.*, 2016. However, an Italian investigation found considerable variations in the DEA 1 status in the dog breeds studied.

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