Electropherograms of reptile species commonly kept as pets

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Introduction

Electrophoresis is often used for the detection of changes in the blood protein composition caused by different diseases, especially in mammals and birds. This technique is also being increasingly used in reptile medicine. The goal of this presentation is to demonstrate typical electropherograms of capillary zone electrophoresis (CZE) of 8 reptile species commonly kept as pets in Europe.

Fig. 1 Hermann's tortoise

Fig. 4 Bearded dragon

Fig. 5 Panther chameleon

Fig. 6 Boa constrictor

Fig. 2 Spur-thighed tortoise

Materials and Methods

- Lithium heparinized plasma samples were analysed from:
 - Hermann's tortoise** (*Testudo hermanni*)
 - Spur-thighed tortoise** (*Testudo graeca*)
 - Red-eared slider** (*Trachemys scripta elegans*)
 - Bearded dragon** (*Pogona vitticeps*)
 - Panther chameleon** (*Furcifer pardalis*)
 - Boa constrictor** (*Boa constrictor*)
 - Ball python** (*Python regius*)
 - Corn snake** (*Pantherophis guttatus*)
- The samples were collected for routine health screening and a clinical chemistry profile was obtained from all samples
- All animals were clinically healthy
- Total protein was measured by the biuret method using the cobas® 8000 analyzer series (Roche Diagnostics, Germany)
- Plasma electrophoresis was performed by CZE using the Sebia MINICAP (Sebia, Lisse, Evry Cedex, France)

Fig. 7 Ball python

Fig. 3 Red-eared slider

Results

- Representative electropherograms are shown in figures 1-8
- Variations between the different reptile species are visible in different numbers and distances between the protein peaks
- Some have a prealbumin fraction
- In comparison to the other reptiles tested, chelonians had larger α-globulin fractions
- Squamates had smaller globulin peaks in comparison to the turtles
- Snakes had larger β-globulin fractions

Fig. 8 Corn snake

Impact and Clinical Significance

Electropherograms can be used as a tool for health assessment in reptiles, but evaluation must be based on species specific parameters. Further studies are necessary for the establishment of reference intervals in healthy individuals and for the diagnosis of specific protein changes due to frequently presented infectious diseases like reptarenavirus infections in snakes or herpesvirus infections in chelonians.