

E2-37 Total protein and albumin levels in the plasma of the captive Sri Lankan elephant (*Elephas maximus maximus*)

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Elephants are an endangered species listed in CITIES INDEX 1. The Sri Lankan elephant (*Elephas maximus maximus*), found only in Sri Lanka has a population of about 3000 of which about 500 are in captivity. It is feared that this elephant may become extinct in the 21st century. A knowledge of normal blood values (physiological baseline data) of the Sri Lankan elephant would be useful in captive breeding as well as in the diagnosis and treatment of elephants. Further, such data may assist in understanding the relationship between different sub-species of elephants.

In this study, the total protein and albumin contents in the blood of 38 healthy captive adult Sri Lankan elephants were determined using Randox test kits: total protein by a colorimetric method where cupric ions in an alkaline medium interact with protein peptide bonds to form a coloured complex, albumin by a colorimetric method where bromocresol green binds with albumin to form the albumin - BCG complex.

The values of plasma proteins obtained in this study (7.24 - 11.59 g/dl) are similar to the values reported previously for the Sri Lankan wild elephant (6 - 11 g/dl). These values are also comparable to those of the Indian elephant, *Elephas maximus indicus*, (6.2 - 10.7 g/dl, 8.4 g/dl and 6.98 g/dl) and the African elephant, *Loxodonta africana*, (8.7 g/dl).

The albumin value reported in this study (mean value of 2.16 g/dl, range 1.06 - 3.07 g/dl) agrees well with the reported value for the Sri Lankan elephant (mean value 2.6 g/dl with a range of 1.5 - 3.6 g/dl). The albumin levels of the Indian elephant are found to be 1.2 g/dl and 2.81 g/dl. There are no reported values of the albumin levels of African elephants.

There appears to be no marked difference between the male and female captive adult Sri Lankan elephant with regard to their plasma proteins and albumin levels. Unfortunately, there is no reported data for the African and Indian male/female elephants for comparison.

This is the first study in which the total plasma protein and albumin levels in male and female elephants have been obtained.