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ELECTROPHORETIC ANALYSIS OF EZO DEER SERUM PROTEINS AND IDENTIFICATION OF A PROTEIN, HAPTOGLOBIN.

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The serum proteins of Sika deer (*Cervus nippon yesoensis* HEUDE) were analyzed with polyacrylamide gradient gel electrophoresis and divided into 37 fractions by densitometry. Analyses of 50 samples obtained from 5 deer over a one year period revealed that the relative concentration of 19 fractions showed only small variations, while that of 4 fractions varied greatly. Since a great variation in some serum proteins must reflect some abnormality of body function, the electrophoretic analysis of serum proteins employed in this study could be useful for the diagnosis of disease in ezo deer.

The fraction showing the greatest variation in concentration was purified and characterized for use as a diagnostic marker. By gel filtration with a Sephadex G-200 column and anion-exchange chromatography with DEAE-Toyopearl 650S, an electrophoretically homogeneous protein was obtained. The protein bound to hemoglobin to form complexes, and cross-reacted with anti-human and anti-bovine haptoglobin (Hp) IgGs. The subunit structure of the protein and the molecular weights of subunits were similar to those of human Hp (2–2 type). Furthermore, the amino acid sequence of the N-terminal of the subunits was almost identical to those of bovine Hp. The protein was thus identified as deer Hp.

Deer Hp may be a good diagnostic marker for some diseases, as serum levels vary remarkably as does Hp in other ruminants such as bovine and goat with acute inflammation.