

## **Electrolytes, Macro Elements and Enzymes Activity in Cerebrospinal Fluid of Sudanese Camels (*Camelus dromedaries*), Cattle and Sheep**

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### **ABSTRACT**

Concentration of some macro minerals (Ca, Mg, K, and Na) and enzymes activity in cerebrospinal fluid (CSF) of Sudanese camel, cattle and sheep were evaluated. Thirty clinically healthy male Sudanese dromedary camels, thirty Sudanese steers and thirty male Sudanese sheep destined for slaughter were used in this study. Cerebrospinal fluid samples were collected into clean sterile containers, immediately after slaughter, through puncture of the cerebellomedullary cistern using sterile 10 cc disposable syringes. On physical examination the CSF of the three species was clear and its viscosity was comparable to that of water. Total proteins, albumin, urea, creatinine and glucose did not show any significant differences ( $p>0.05$ ).between the three species. The concentration of Ca and K in CSF of the three species did not show significant different; and their values are as follows of Ca ( $5.65\pm 0.13$ ,  $5.48\pm 0.19$  and  $5.16\pm 0.21$ ) mg/100ml, and K ( $3.53\pm 0.37$ ,  $3.09\pm 0.11$  and  $3.13\pm 0.13$ ) mmol/L. Significant differences were observed in concentration of Mg and Na between camels, cattle and sheep and their values are as follows of Mg ( $2.28\pm 0.13$ ,  $1.49\pm 0.18$  and  $2.35\pm 0.16$ ) mg/100ml, and Na ( $121.37\pm 3.38$ ,  $104.87\pm 8.63$  and  $147.87\pm 5.37$ ) mmol/L. Camel registered significantly higher concentrations of SGPT ( $7.37\pm 0.96$  U/L) and ALP ( $76 \pm 2$  U/L) than cattle and sheep. Camels CSF registered significantly lower SGOT concentration ( $21.13\pm 1.59$  U/L) than that of sheep ( $24.8\pm 2.78$  U/L). The values reported in this study can serve as a reference values for Sudanese camel.

**Keywords:** Macro Elements, Enzymes, CS Fluid, Camels.