



## Serum biochemical study of major elements of captive Asiatic Lions *Panthera leo persica*

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Serum biochemistry is an important clinical diagnostic tool for understanding physiological abnormalities. There is a paucity of information on normal biochemical baseline reference values in Asiatic Lions (*Panthera leo persica*) in India, and this paper presents data obtained from captive individuals.

A total of 44 serum samples were obtained from individuals (20 males, 24 females) resident in zoos in Gujarat (Vadodara, Junagadh, Rajkot and Ahmedabad). Animals underwent a thorough physical examination using a squeeze cage before collection of samples. They were found to be healthy. During the study no changes were made in diet or other husbandry practices. Approximately 15ml of blood was drawn; serum was separated and transferred to a sterile plain vial and stored at -20°C until further analysis.

Standard reagent kits (Bayer diagnostic laboratory, Baroda) were used to analyze serum samples for levels of: alkaline phosphatase (AKP), glucose (glu), blood urea nitrogen (BUN), cholesterol (Chole), creatinine (creat), alanine amino transferase (ALT), aspartate amino transferase (AST), total

protein (TP), albumin (Alb), globulin (Glb) and triglyceride (Trig). Serum chemistry estimations were performed using a semi-automatic serum chemistry analyser (Mod- BT-224, Trans Asia, Bombay).

Results from the analysis of serum from captive lions are presented in Table 1. No significant variation was observed between zoos or sexes. The mean value of alkaline phosphatase (AKP) was 52.09±5.40 u/l, not significantly different from values reported by Wallach & Boever (1983; 17 U/l) and ISIS (Anon 1999; 33 U/l). Serum glucose was 95.04±4.27 mg/dl, consistent with the value reported by Christi et al. (1998). Also consistent with previously published data for Asiatic and African lions were serum BUN (32.14±2.52), cholesterol (158.27±8.05 mg/dl), creatinine (2.35±0.11 mg/dl), ALT and AST (41.31±3.7 U/l and 32.75±4.21 U/l respectively), total serum protein (8.2±0.24 g%), albumin (3.34±0.13 g %), globulin (5.07±0.25 g%) and triglyceride (30.08±1.85 mg/dl).

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**Table 1. Biochemical Parameters of Asiatic lions**

Biological parameter	Males (n = 20)			Females (n = 24)			Total (n = 44)		
AKP (U/l)	57.25	36.84	8.24	47.79	35.12	7.17	52.09	35.81	5.40
Glu (mg/dl)	91.02	5.99	0.67	98.39	29.72	6.07	95.04	28.34	4.27
BUN (mg/dl)	30.02	11.62	2.60	33.91	20.12	4.11	32.14	16.74	2.52
Chole (mg/dl)	149.60	49.19	11	165.48	56.63	11.56	158.27	53.37	8.05
Creat(mg/dl)	2.22	0.78	0.17	2.46	0.65	0.13	2.35	0.71	0.11
ALT (U/l)	35.42	19.82	4.43	41.42	27.69	5.65	41.31	24.53	3.70
AST (U/l)	29.53	11.89	2.66	35.43	36.36	7.42	32.75	27.90	4.21
TP (g% )	8.47	1.66	0.37	8.39	1.52	0.31	8.42	1.56	0.24
Alb (g% )	3.24	0.79	0.22	3.43	0.74	0.15	3.34	0.85	0.13
Glb (g% )	5.20	1.65	0.37	4.96	1.70	0.35	5.07	1.66	0.25
Trig (mg/dl)	29.13	12.80	2.86	30.82	11.97	2.44	30.08	12.24	1.85

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