

## **Histological and Histochemical Studies on the Stomach Glandular Sacs of the Dromedary Camel (*Camelus dromedarius*)**

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### **ABSTRACT**

Unique morphological and physiological features characterize the dromedary camel stomach. Despite the expected functional and nutritional importance of these features, research on anatomical and histological structures of this organ is lacking. This study aimed to investigate histological and histochemical features of caudodorsal and cranioventral glandular sacs of the camel stomach. It was conducted on histological samples of stomach caudodorsal and cranioventral glandular sacs of adult camels collected at Tambul slaughterhouse, central Sudan. The results revealed that camel stomach consisted of four histological compartments; 1, 2, 3 and 4. Cranioventral and caudodorsal sacs were found in compartment 1. Each saccule (pit) of these sacs contained a non-glandular wall (fold) and a floor that was centrally glandular and peripherally non-glandular. The non-glandular regions mucosa was lined by keratinized stratified squamous epithelium, whereas the glandular region was lined by simple columnar epithelium and contained serous secreting glands. The glandular epithelial cells of cranioventral and caudodorsal sacs showed strong positive PAS reaction; glycogen digestion was detected in glandular tissue. Blue cells, red cells and purple cells were also observed in the glands following PAS and AB reactions. Alkaline phosphatase reaction was positive in glandular tissue of cranioventral and caudodorsal sacs especially

in the luminal parts of epithelial cells. These results were discussed in relation to nutritional and water loss and conservation effects of glandular sacs in camel stomach.

**Keywords:** Dromedary Camel, Stomach Glandular Sac, Histology, Histochemistry