بسم الله الرحمن الرحيم

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Cairo University
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Studies on the Mammary Gland of the One Humped Camel (*Camelus dromedarius*)

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For the degree of Ph.D
(Cytology & Histology)

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ABSTRACT

This thesis aimed to study the complete histological picture of the camel mammary gland. This study was performed on whole udder of 9 healthy lactating she-camels (Camelus dromedaries) were dissected of the fresh carcasses just after slaughtering. Techniques were applied cover anatomical, histological, histochemical, immunohistochemical and ultrastructure examination. The gross examination of the camel mammary gland revealed that it is composed of four teats. Each teat ended by two separate orifices: cranial and caudal. Each orifice leads to a separate lactating gland. Our histological results indicated that the cranial gland cistern was significantly wider than the caudal one. The alveoli of the cranial gland were larger in size, more active, and stretched with secretion than caudal one. The ultrastructure examination showed differences in structure and activity between the secretory cells of the two glands. The immunohistochemical examination of the lactating mammary gland showed strong expression of CK5/6 in both glands. On the other hand, the two glands showed different reactions to CK8/18, ER and PR. The intense of the PAS and AB reactions were more intense in the cranial gland alveolar secretion when compared to the caudal gland. The alveolar secretion of the cranial gland showed stronger reaction for α- and β- casein. Positive staining of β -casein in cranial gland was localized both on the alveolar secretion and in most cells surrounding the lumen of the alveoli. The obtained results were illustrated and discussed in details to determine the objectives of the thesis. Consequently, this study could help in deeper understanding of the nutritional value of the secretion of each gland and will be useful for further studies in dairy research.

Keywords: She-Camel mammary gland, CK5/6, CK8/18, ER, PR, PAS, AB, α -casein**,** β -casein

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DEDICATION

*First and foremost, all praises and thanks be to **Allah** for providing me the health and ability to complete my Ph.D degree.*

*Then, I dedicate this thesis to the soul of **my father** who formed part of my vision and taught me the good things that really matter in my life.*

*My sincere gratitude to **my mother**, your prayers always surrounded me and was what sustained me thus far.*

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