

**SOME HISTOLOGICAL STUDIES ON THE
PANCREATIC ISLET CELLS IN TURKEY
(Maleagris gallopavo)**

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SUMMARY

Pancreatic islets of Turkey were different from those of mammals. It is divided into alpha, beta and mixed types according to the ground of cellular composition. The alpha islets are composed of A-cells and D-cells. Whereas the beta islets are composed of B-cells and D-cells. The mixed islets were composed mainly of B-cells, a few D-cells and A-cells. APP cells were not obvious.

INTRODUCTION

The endocrine tissue of the pancreas is composed of specialized cells collected together in the islets of Langerhans scattered. Throughout the gland and secrete insulin and glucagon (1,2). The histological features of the islets of Langerhans in the pancreas have been described in several animal species such as mouse (3), rat (4) golden hamster (5), rabbit (6), cat (7), dog (8), camel (9), man (10), and bird (11,12). The present work was designed to describe the cellular component of pancreatic islets in turkey which seemed to be of interest and would be of value for further investigations.

MATERIALS AND METHODS

Four adult turkeys of both sexes were used for this study. The animals were sacrificed and cardiac perfusion with physiological saline followed by Bouin's fluid was conducted. All the pancreas were removed and immersed in the same fixative for four hours. The pancreatic lobes were dissected under a stereoscopic microscope and cut into blocks. These tissue blocks were washed, dehydrated through ascending concentrations of ethyl alcohol, cleared in xylol and embedded in paraffin wax. Sections at five micrometers were made and stained hematoxylin and eosin, masson trichrome, and Gomoris aldehyde-fuchsin and (13).

RESULTS AND DISCUSSION

The pancreatic islets of turkey were found different from those of mammals in that it divided into alpha, beta and mixed islets. This finding agree with the observation of Al-Tikrity and Al-Samarrae (14) in the pancreas of chicken. According to the ground of the cellular composition, the alpha islets were composed of A-cells contained and D-cells and some what restricted to the third and splenic lobes (15,16), whereas the beta islets were generally consisted of B-cells and D-cells which distributed throughout the pancreas. This is in agreement with the work of Mikami and Match (15) on the pancreatic islets in the chicken. The mixed type islets in the pancreas of turkey were composed of A-cells, B-cells and D-cells. This finding was also reported by Mohammad and Al-Samarrae (12) in the pancreatic islets of an indigenous duck. The A-cells were large and had oval nuclei. The cytoplasm of A-cells contained acidophilic granules stained intensely with acid fuchsin (15,17). The beta cells were small, spherical and had small spherical nuclei. Their cytoplasm contained rather fine basophilic granules which were stained bluish to purple by

Masson's trichrome staining or bluish to violet with Gomori's aldehyde fuchsin method. This was in accordance with the observations of Mohammad and Al-Samarrae (12) in the pancreatic islets of an indigenous duck, and Smith (16) in the pancreatic islets of coturnix quail. The mixed type islets contained D-cells. These cells were also found in alpha and beta islets. The D-cells were spindle or polygonal in shape and had oval nuclei. Their cytoplasm contained fine granules stained light blue with aniline blue. In the present study, a cellular poly-peptide (APP) immunopositive cells were difficult to identify as a type of endocrine cells because it needs the peroxidase antiperoxidase complex (PAP) technique. Moreover, the APP cells were considered as extra-islet endocrine cells and do not seem to be the essential constituents of the islets (18,19).

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بعض الدراسات النسيجية لخلايا جزيرات البنكرياس
في الديك الرومي (*Maleagris gallopavo*)

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العراق.

تأريخ استلام البحث تشرين أول 1997 تأريخ قبول البحث نيسان 1998

الخلاصة

تختلف جزيرات بنكرياس الديك الرومي عن جزيرات بنكرياس
اللبائن ، حيث تقسم إلى الأنواع ألفا ، وبيتا ، والمختلط حسب المكونات الخلوية
لها. تحتوي جزيرات ألفا على خلايا A وخلايا D بينما تحتوي جزيرات بيتا
على خلايا B وخلايا D. تمتلك الجزيرات المختلطة على خلايا B وقليل من خلايا
D وخلايا A. ولم يكن عديد الببتيد اللاخلوي APP واضح المعالم.