

MORPHOLOGICAL CHARACTERISTICS OF PANCREAS OF CEMANI CHICKEN (*Gallus gallus domesticus*)

ONG KAI SEN



**STUDY PROGRAM OF VETERINARY MEDICINE
SCHOOL OF VETERINARY MEDICINE
AND BIOMEDICAL SCIENCES
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2026**





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ABSTRACT

ONG KAI SEN. Morphological Characteristics of Pancreas of Cemani Chicken (*Gallus gallus domesticus*). Supervised by SAVITRI NOVELINA and CHAIRUN NISA'.

The cemani chicken (*Gallus gallus domesticus*) is a local Indonesian chicken characterized by distinctive black pigmentation throughout its body due to fibromelanosis. However, information regarding the morphology of its pancreas remains limited. This study examined the anatomical and histological characteristics of the pancreas in three-month-old female cemani chickens. Anatomical observations were the site and morphology of the pancreas, while the general structure was examined using Hematoxylin–Eosin (H&E) staining. The pancreas was long, pink, and located within the duodenal loop. The exocrine component was composed of densely packed pancreatic acini with pyramidal secretory cells, and the endocrine component consisted of alpha and beta cells in the Langerhans islets. Based on size, there are two types of islets, large type and small type, distributed throughout the parenchyma. The ductal system comprised intercalated ducts lined by low cuboidal epithelium, intralobular ducts lined by simple cuboidal epithelium, and interlobular ducts lined by low columnar epithelium. Melanin pigment was found in connective tissue and within peripheral small islets and islets cells in the cranial part of the pancreas.

Keywords: cemani chicken, fibromelanosis, histology, islets of Langerhans, pancreas.

ABSTRAK

ONG KAI SEN. Karakteristik Morfologi Pankreas Ayam Cemani (*Gallus gallus domesticus*). Dibimbing oleh SAVITRI NOVELINA dan CHAIRUN NISA'.

Ayam cemani (*Gallus gallus domesticus*) adalah ayam lokal Indonesia yang bercirikan warna hitam pada otot, bulu dan organ internal akibat fibromelanosis. Penelitian ini mengkaji karakteristik anatomi dan histologi pankreas pada ayam cemani betina berumur tiga bulan. Pengamatan anatomi meliputi lokasi dan morfologi pankreas, sedangkan pengamatan morfologi umum dilakukan dengan pewarnaan Hematoxylin–Eosin (H&E). Pankreas berbentuk panjang, berwarna merah muda, dan terletak di dalam lengkung duodenum. Komponen eksokrin terdiri dari sel asinar pankreas yang tersusun rapat dengan sel sekretori piramidal, sedangkan komponen endokrin terdiri atas sel alfa dan beta yang terdistribusi di pulau Langerhans besar tipe dan kecil tipe. Sistem duktus terdiri atas duktus interkalatus yang dilapisi sel epitel kuboid rendah, duktus intralobular yang dilapisi sel epitel kuboid sederhana, dan duktus interlobular yang dilapisi sel epitel kolumnar rendah. Pigmen melanin ditemukan pada jaringan ikat dan di dalam pulau Langerhans kecil di bagian kranial pankreas.

Kata kunci: ayam cemani, fibromelanosis, histologi, pankreas, pulau Langerhans



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MORPHOLOGICAL CHARACTERISTICS OF PANCREAS OF CEMANI CHICKEN (*Gallus gallus domesticus*)

ONG KAI SEN

Undergraduate thesis
as one of the requirements to obtain a degree of
Bachelor of Veterinary Medicine
in the School of Veterinary Medicine and Biomedical Sciences

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Examiners in final exam:

- 1 drh. Vetnizah Juniantito, Ph.D., APVet
- 2 Dr. drh. Okti Nadia Poetri, M.Si, M.Sc

Title : Morphological Characteristics Of Pancreas Of Cemani Chicken
(*Gallus gallus domesticus*)
Name : Ong Kai Sen
NIM : B0401211808

Accepted by

Supervisor 1:
Dr. drh. Savitri Novelina, M.Si, PAVet



Supervisor 2:
Dr. drh. Chairun Nisa', M.Si, PAVet



Approved by

Head of Veterinary Medicine Study Program:
Dr. drh. Wahono Esthi Prasetyaningtyas, M.Si
NIP. 198006182006042026



Vice Dean for Academic, Student Affairs and Alumni:
Prof. drh. Ni Wayan Kurniani Karja, M.P., Ph.D
NIP. 196902071996012001



Date of final exam: 7 August 2026

Date of graduation: 13 AUG 2026



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PREFACE

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May this work be beneficial to those in need and contribute to the advancement of scientific knowledge.

Bogor, August 2026

Ong Kai Sen



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