



## IDENTIFICATION AND RESISTANCE OF Enterococcus faecium ISOLATED FROM BALL PYTHON (Python regius) TOWARDS SEVERAL ANTIBIOTICS

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STUDY PROGRAM OF VETERINARY MEDICINE SCHOOL OF VETERINARY MEDICINE AND BIOMEDICAL **SCIENCES IPB UNIVERSITY BOGOR** 2025





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Bogor, July 2025

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## **ABSTRACT**

MAXIMILLIAN LIMIARTO. Identification and Resistance of *Enterococcus faecium* Isolated from Ball Python (*Python regius*) towards Several Antibiotics. Supervised by SAFIKA and UPIK KESUMAWATI HADI.

The increasing popularity of keeping exotic animals such as ball pythons (*Python regius*) has led to the increase in human-animal contact, potentially facilitating the transmission of microorganisms. *Enterococcus* spp. are a common commensal bacterium in the digestive tracts of animals and can act as opportunistic pathogens and harbour multidrug-resistance (MDR) genes. This research aims to identify *Enterococcus faecium* isolated from ball pythons and their resistance towards antibiotics. Identification was done on eight bacterial isolates using macroscopic, microscopic and biochemical test methods. An antibiotic susceptibility test against seven antibiotics according to Kirby-Bauer's disc diffusion method was conducted. A total of eight isolates were identified as *Enterococcus faecium*. A total of six out of eight isolates were considered to be multi-drug resistant. The results of *E. faecium* isolated in this research showed high resistance towards nalidixic acid, erythromycin, gentamicin and remain generally susceptible towards tetracycline, trimethoprim-sulfamethoxazole, and ampicillin in an in vitro setting.

Keywords: antibiotic resistance, ball python, Enterococcus faecium, MDR

## **ABSTRAK**

MAXIMILLIAN LIMIARTO. Identifikasi dan Uji Resistansi *Enterococcus faecium* yang Diisolasi dari *Ball Python (Python regius)* terhadap Beberapa Antibiotik. Dibimbing oleh SAFIKA dan UPIK KESUMAWATI HADI.

Meningkatnya popularitas pemeliharaan hewan eksotis seperti ball python (Python regius) telah menyebabkan peningkatan kontak antara manusia dan hewan, yang berpotensi memfasilitasi penularan mikroorganisme. Enterococcus spp. adalah bakteri komensal umum dalam saluran pencernaan hewan dan dapat bertindak sebagai patogen oportunis serta membawa gen multidrug-resistance (MDR). Penelitian ini bertujuan untuk mengidentifikasi Enterococcus faecium yang diisolasi dari ball python dan resistansinya terhadap antibiotik. Identifikasi dilakukan pada delapan isolat bakteri menggunakan metode uji makroskopis, mikroskopis, dan biokimia. Uji kepekaan antibiotik terhadap tujuh antibiotik dilakukan menurut metode difusi cakram Kirby-Bauer. Teridentifikasi delapan isolat sebagai Enterococcus faecium. Sejumlah enam dari delapan isolat menunjukkan hasil multi-resistan. Hasil E. faecium yang diisolasi dalam penelitian ini menunjukkan resistansi tinggi terhadap asam nalidiksat, eritromisin, gentamisin, dan cenderung sensitif terhadap tetrasiklin, trimetoprim-sulfametoksazol, dan ampisilin dalam lingkungan in vitro.

Kata kunci: ball python, Enterococcus faecium, resistansi antibiotik, MDR







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## **MAXIMILLIAN LIMIARTO**

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

STUDY PROGRAM OF VETERINARY MEDICINE SCHOOL OF VETERINARY MEDICINE AND BIOMEDICAL **SCIENCES IPB UNIVERSITY BOGOR** 2025



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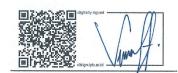
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## **PREFACE**

The author expresses praise and gratitude to God Almighty for all His blessings, enabling the completion of this research. The theme chosen for this research, conducted from November 2024 to April 2025, is the "Identification and Resistance of Enterococcus faecium Isolated from Ball Python (Python regius) towards Several Antibiotics.

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

Bogor, July 2025

Maximillian Limiarto







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