

## INTISARI

### **ANALISIS DIVERSITAS GENETIK KAMBING BLIGON KABUPATEN KULON PROGO BERDASARKAN SEGEMEN *HYPERVARIABLE-1* (HV1) DAERAH KONTROL D-LOOP DNA MITOKONDRIA (mtDNA)**

**Haniya Farzana**  
**21/476786/KH/10879**

Gen *hypervariable-1* (HV1) merupakan gen daerah kontrol D-Loop DNA mitokondria yang dapat digunakan dalam analisis diversitas genetik makhluk hidup. Daerah HV1 memiliki tingkat polimorfisme (substitusi basa) yang tinggi dalam DNA mitokondria. Kambing Bligon merupakan kambing asal Indonesia tepatnya dari daerah Yogyakarta dan Jawa Tengah. Penelitian mengenai analisis genetik sekuen gen HV1 telah dilakukan terhadap beberapa spesies, tetapi belum ada yang melakukan penelitian analisis diversitas genetik terhadap kambing Bligon.

Tujuan dari penelitian ini adalah menganalisis hubungan kekerabatan genetik kambing Bligon dengan kambing lainnya, serta menganalisis haplogrup dari kambing Bligon berdasarkan segmen *hypervariable-1* (HV1) yang berukuran 481 bp daerah D-Loop DNA mitokondria. Sembilan sampel isolat DNA kambing Bligon yang terbagi menjadi tiga kelompok berdasarkan pakan diamplifikasi dengan primer dengan kode akses LC571947.1 (Mannen dkk., 2001) dan dihasilkan primer AHHV1-F dan AHHV1-R. Produk PCR yang sudah diamplifikasi, dilakukan *alignment* bersama dengan sampel kambing (*Capra hircus*) lain sebagai pembandingan dan dianalisis.

Hasil analisis didapatkan situs polimorfik sebanyak 32 situs, jarak genetik antara 0,0000-0,0595, persentase basa nukleotida sampel 30,1% (T), 22,9% (C), 31,5% (A), dan 15,5% (G), sampel kambing Bligon termasuk ke dalam *haplogrup* B (tipe Asia Tenggara atau Asia Timur), dan memiliki jarak genetik yang dekat dengan kambing lokal yaitu kambing Marica, kambing Kacang, dan kambing Samosir.

**Kata kunci:** genetik, *hypervariable-1* (HV1), kambing Bligon, PCR

## ABSTRACT

### **ANALYSIS OF GENETIC DIVERSITY OF BLIGON GOAT KULON PROGO DISTRICT BASED ON SEGMENT HYPERVARIABLE-1 (HV1) D-LOOP CONTROL REGION OF MITOCHONDRIA DNA (mtDNA)**

**Haniya Farzana**  
**21/476786/KH/10879**

Gen hypervariable-1 (HV1) is a D-Loop control region gene of mitochondrial DNA that can be used in the analysis of genetic diversity of organism. The HV1 region has a high level of polymorphism (base substitution) in mitochondrial DNA. Bligon goats are goats originating from Indonesia, precisely from the Yogyakarta and Central Java regions. Research on genetic analysis of HV1 gene sequences has been conducted on several species, but no one has conducted research on genetic diversity analysis of Bligon goats.

The aim of this study was to analyze the genetic relationship between Bligon goats and other goats, as well as to analyze the haplogroups of Bligon goats based on segments hypervariable-1(HV1) which is 481 bp in the D-Loop region of mitochondrial DNA. Nine samples of Bligon goat DNA isolates divided into three groups based on feed were amplified with primers with access code LC571947.1 (Mannen et al., 2001) and the primers AHHV1-F and AHHV1-R were produced. The amplified PCR products were carried out alignment along with goat samples (*Capra hircus*) others as a comparison and analyzed.

The results of the analysis obtained 32 polymorphic sites, genetic distance between 0.0000-0.0595, the percentage of sample nucleotide bases was 30.1% (T), 22.9% (C), 31.5% (A), and 15.5% (G), the Bligon goat sample was included in haplogrup B (Southeast Asian or East Asian type), and has a close genetic distance to local goats, namely Marica goats, Kacang goats, and Samosir goats.

**Keywords:** Bligon goat, genetic, hypervariable-1 (HV1), PCR