ISOLASI DNA DAN DETEKSI DAGING ANJING (*Canis lupus*) MENGGUNAKAN METODE PCR-RFLP DENGAN ENZIM AciI

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INTISARI

Penelitian ini dilakukan dengan tujuan untuk menerapkan metode deteksi daging anjing (*Canis lupus)* yang dicampurkan dengan daging kambing melalui *Polymerase Chain Reaction-Restriction Fragment Length Polymorphism* (PCR-RFLP) dengan enzim AciI. Level kontaminan dari daging anjing dibuat sebesar 1, 3, 5, dan 10% dari total daging dalam campuran dengan kontrol 100% daging anjing dan 100% daging kambing. Tahapan penelitian meliputi isolasi DNA dari sampel daging, pengukuran konsentrasi dan kemurnian DNA, amplifikasi gen *cytochrome b* melalui teknik PCR, dan proses digesti dengan enzim restriksi AciI dengan teknik RFLP. Isolasi DNA dengan menggunakan metode Sambrook yang telah dimodifikasi dan identifikasi daging anjing menggunakan metode PCR-RFLP dengan enzim AciI. Kemurnian DNA tersebut diukur dengan metode Spektrofotometer. Hasil isolasi DNA dari sampel menunjukkan bahwa semua DNA sampel daging dapat terisolasi dengan rata-rata 165,728 µg/ml dan kemurnian 1,858. Proses amplifikasi menggunakan primer universal *cytochrome* b dan semua sampel berhasil teramplifikasi *cytochrome* b dengan panjang fragmen 359 bp. Enzim AciI dalam *website nebcutter* akan memotong DNA dari gen *cytochrome b* menjadi 1 fragmen sebesar 168 bp, pada kambing tidak terjadi pemotongan, sedangkan pada hasil penelitian terpotong menjadi 2 fragmen sebesar 359 bp dan 264 bp. Metode PCR-RFLP ini merupakan teknik yang potensial untuk menganalisis deteksi adanya kontaminasi baha tertentu terutama yang berkaitan dengan status kehalalan suatu produk.

(Kata kunci : Isolasi, identifikasi, daging anjing (*Canis lupus*), enzim AciI, gen *cytochrome b*, PCR-RFLP)

DNA ISOLATION AND DETECTION OF DOG MEAT (*Canis lupus*) USING PCR-RFLP METHOD WITH AciI ENZYME

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ABSTRACT

This research was conducted with the aim of applying the detection method of dog meat (Canis lupus) mixed with mutton through the Polymerase Chain Reaction Restriction Length Polymorphism (PCR-RFLP) with the AciI enzyme. Contaminants from dog meat are made at 1, 3, 5, and 10% of the total meat in the mixture with 100% control of dog meat and 100% mutton. The research stages included DNA isolation from meat samples, measurement of DNA concentration and purity, cytochrome b gene amplification through PCR technique, and digestion process with AciI restriction enzyme with RFLP technique. DNA isolation using the Sambrook method that has been modified and identification of dog meat using the PCR-RFLP method with the AciI enzyme. DNA purity was measured by the Spectrophotometer method. The results of DNA isolation from the sample showed that all DNA of meat samples could be isolated with an average of 165,728 µg/ml and purity of 1,858. The amplification process uses universal cytochrome b primers and all samples were successfully amplified with cytochrome b with a fragment length of 359 bp. The AciI enzyme in the nebcutter website will cut DNA from the cytochrome b gene into 1 fragment of 168 bp, the goats did not cut, while the results of the study were cut into 2 fragments of 359 bp and 264 bp. This PCR-RFLP method is a potential technique for analyzing the detection of certain types of contamination, especially those related to the halal status of a product.

(Keywords: Isolation, identification, dog meat (Canis lupus), AciI enzyme, cytochrome b gene, PCR-RFLP)