Polimorfisme gen kappa-kasein (KCN) dengan PCR-RFLP pada kerbau (bubalus bubalis) = Polymorphisms study of kappa casein (KCN) gene by PCR-RFLP in buffalo (bubalus bubalis)

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Abstrak

ABSTRAK
Gen Kappa-kasein (KCN) merupakan gen yang mengatur komposisi dan produktivitas susu pada hewan ternak, termasuk kerbau asli Indonesia. Penelitian mengenai polimorfisme gen KCN di Indonesia belum banyak dilakukan. Penelitian bertujuan untuk mengetahui ada atau tidaknya polimorfisme gen KCN pada kerbau dan mengetahui frekuensi genotip serta alel gen KCN kerbau. Sampel yang digunakan adalah sampel darah dengan jumlah 6 sampel kerbau lumpur dan 6 sampel kerbau sungai. Metode yang digunakan adalah PCR-RFLP dengan enzim restriksi HindIII. Amplifikasi sekuen DNA target pada ekson 4 gen KCN kerbau menggunakan metode PCR menghasilkan amplikon sepanjang 379 bp. Berdasarkan hasil PCR-RFLP, didapatkan frekuensi genotip BB sebesar 100% dan frekuensi alel B sebesar 1,00. Baik pada kerbau lumpur maupun kerbau sungai, gen KCN ditemukan monomorfik karena tidak terdapat variasi alel (alel A).
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ABSTRAK
Kappa-casein (KCN) gene is a protein encoding gene which associates with differences in bovine milk composition and productivity, including Indonesian buffalo. Kappa-casein (KCN) gene is known to have an important role in cheese production and casein micelle stabilization. However, the study about KCN gene polymorphism in Indonesia is rarely done. This study aimed to investigate the existence of KCN gene polymorphisms along with genotyping and allelic frequencies of KCN gene performed by PCR-RFLP using HindIII restriction endonuclease. A total number of 6 water buffalo and 6 swamp buffalo samples were used. Amplicon of 379 bp in length was produced by PCR amplification in exon 4 of buffalo KCN gene. Genotyping of 12 samples revealed that all buffalo samples were monomorphic, showing only BB genotype. The calculated genotype frequency for BB was 100%, meanwhile the allelic frequency for B was 1.00.