

Intisari

IDENTIFIKASI DAN KARAKTERISASI BAKTERI *Vibrio* PATOGEN UDANG VANAME (*Penaeus vannamei*, Boone 1931) YANG DIBUDIDAYAKAN DI PULAU BALI

Penyakit vibriosis merupakan salah satu tantangan penting bagi budidaya udang vaname di Indonesia. Penelitian ini bertujuan untuk mengidentifikasi dan karakterisasi bakteri *Vibrio* yang bersifat patogen pada udang vaname dari tambak udang di daerah Pulau Bali. Bakteri diisolasi dari hepatopankreas udang dan dilakukan pemeriksaan histologi jaringan. Pengujian sifat patogen bakteri dilakukan dengan *postulat Koch*. Identifikasi bakteri dilakukan dengan berdasarkan sekuen gen *pyrH* dan karakteristik biokimia. Bakteri patogen yang didapat adalah isolat VB1, VB4, VB6, VB9, VB12, VB13, dan VB15 dengan ditemukannya kesamaan antara udang yang diinfeksi yaitu hepatopankreas memucat, saluran pencernaan kosong/putih, melanisasi pada karapas, dan nekrosis pada uropod. Pemeriksaan histopatologis menunjukkan penipisan sel epitel, nekrosis sel, pelebaran nukleus, infiltrasi hemosit, dan penyempitan lumen. Keseluruhan bakteri patogen bukan bakteri penyebab AHPND. Isolat VB1 merupakan bakteri *Photobacterium damsela* subsp. *damsela*, isolat VB4 dan VB12 adalah *Vibrio parahaemolyticus*, dan isolat VB6, VB9, VB13, dan VB15 merupakan bakteri *Vibrio harveyi*.

Kata kunci: biokimia bakteri, hepatopankreas, *postulat Koch*, gen *PyrH*, vibriosis.

Abstract

IDENTIFICATION AND CHARACTERIZATION OF PATHOGENIC *Vibrio* BACTERIA ON WHITELEG SHRIMP (*Penaeus vannamei*, Boone 1931) CULTURED IN BALI ISLAND

Vibriosis disease is one of the important challenges for whiteleg shrimp culture in Indonesia. This study aimed to identify and characterize *Vibrio* bacteria that are pathogenic to whiteleg shrimp from shrimp farms in the Bali Island area. Bacteria were isolated from the hepatopancreas of shrimp and tissue histology was examined. Testing for pathogenic properties of bacteria was carried out with Koch's postulates. Bacterial identification was based on *pyrH* gene sequence and biochemical characteristics. The pathogenic bacteria obtained were isolates VB1, VB4, VB6, VB9, VB12, VB13, and VB15 with similarities found among infected shrimp, namely pale hepatopancreas, empty/white digestive tract, melanization of the carapace, and necrosis of the uropod. Histopathological examination showed thinning of epithelial cells, cell necrosis, enlargement of the nucleus, hemocyte infiltration, and narrowing of the lumen. All pathogenic bacteria were not AHPND-causing bacteria. Isolate VB1 was *Photobacterium damsela* subsp. *damsela*, isolates VB4 and VB12 as *Vibrio parahaemolyticus*, and isolates VB6, VB9, VB13, and VB15 were *Vibrio harveyi*.

Keyword: bacterial biochemistry, hepatopancreas, Koch's postulates, *PyrH* gene, vibriosis.