東海大學畜產與生物科技學系

Department of Animal Science and Biotechnology Tunghai University

博士論文

Doctor Thesis

指導教授:歐柏榮

Advisor: Dr. Bor-Rung Ou

應用恆溫核酸擴增技術檢測蝦類病毒性疾病

Application of isothermal nucleic acid amplification on shrimp viral disease diagnosis

研究生: 鄧秉華

Graduate student: Ping-Hua Teng

中華民國九十八年六月

June, 2009

生物科技學系東海大學畜產與

博士論文

應用恆溫核酸擴增技術

檢測蝦類病毒性疾病

(97)

研究生:鄧秉華

撰

Contents:

Chapter	Title	Page
	中文摘要	1
	Abstract	2
Chapter 1	Introduction	4
	Table 1	4
	Table 2	6
	References	7
	Detection of infectious hypodermal and hematopoietic	
Chapter 2	necrosis virus (IHHNV) in Litopenaeus vannamei by	12
	ramification amplification (RAM) assay	
	Background	12
	Materials and Methods	13
	Results	16
	Discussion	21
	References	23
	Table 1	14
	Figure 1	15
	Figure 2	17
	Figure 3	18
	Figure 4	19
	Figure 5	20
	Figure 6	21
Chantan 2	Rapid and sensitive detection of Taura syndrome virus	27
Chapter 3	using nucleic acid-based amplification	21
	Background	27
	Materials and Methods	28
	Results	32
	Discussion	41
	References	42
	Table 1	29
	Table 2	39

	Figure 1	33			
	Figure 2	34			
	Figure 3	35			
	Figure 4	36			
	Figure 5	38			
	Figure 6	40			
	Specific detection of reverse transcription-loop-mediated				
Chapter 4	isothermal amplification amplicons for Taura syndrome	46			
	virus by colorimetric dot-blot hybridization				
	Background	46			
	Materials and Methods	48			
	Results	50			
	Discussion	58			
	References	61			
	Table 1	49			
	Table 2	55			
	Table 3	55			
	Figure 1	51			
	Figure 2	52			
	Figure 3	54			
	Figure 4	56			
	Figure 5	57			
C1	Real-time detection of white spot syndrome virus (WSSV)	64			
Chapter 5	by isothermal amplification				
	Background	64			
	Materials and Methods	66			
	Results	67			
	Discussion	72			
	References	73			
	Table 1	67			
	Figure 1	68			
	Figure 2	68			
	Figure 3	69			

Figure 4	70
Figure 5	70
Figure 6	71
Figure 7	72