

CHAPTER II

OBJECTIVES

2.1 Rationale

Black tiger shrimp *P. monodon* is economically important aquatic animal in Thailand and other countries worldwide. Currently, shrimp farmers are encountering the problem of incomplete reproductive maturation in captive culture. Vitellogenesis plays an important role in ovarian maturation of the female broodstock shrimps, which is regulated by various neurotransmitters. Dopamine (DA) is a neurotransmitter that is proposed to interact with dopamine receptor (DAR) to mediate vitellogenesis process. Although DA has been well studied, much less is known about its receptor. In this study, DAR in *P.monodon* will be characterized for a better understanding in its structures and functions.

2.2 Objectives

The aims of this study are divided into three parts:

1. To clone and characterize DAR cDNA in *P. monodon*
2. To determine tissue distribution and mRNA expression levels of DAR in *P. monodon*
3. To investigate the functional activity of recombinant DAR of *P. monodon* in COS-1 cells.