Wimonsiri Sehawong 2011: Cloning, Expression Gene and Enzyme Activity Analysis of $\alpha$-*amylase* from Oyster (*Saccostrea commercialis*). Master of Science (Genetic Engineering), Major Field: Genetic Engineering, Interdisciplinary Graduate Program.
Thesis Advisor: Associate Professor Lertluk Ngernsiri, Ph.D. 79 pages.

The study reports the full length nucleotide sequence of $\alpha$-*amylase* (*ScAmy*) cDNA gene from the oyster, *S. commercialis,* using Rapid Amplification of cDNA End (RACE) technique. The obtained *ScAmy* cDNA was 1,729 bp long. The cDNA contained a 1,563 bp open reading frame (ORF) encoding 520 amino residuess. The predicted ScAmyI molecular mass of mature protein was 57.763 kDa and the estimated isoelectric point (pI) was 6.36. The α-amylase (ScAMY) protein had 9 conserved domains ( FEW, GYCGVQISP, DVIINHM, HNYN, LVDLK, GFRVDTAKH, EVID, FTDNHD, GLTRVMSSY). The ScAMY sequence was BLAST with the CgAMY of *Crassostrea gigas* and showed 88 % identity. The optimum temperature and pH of ScAMY were found at 40 °C and 6.00, respectively. The enzymes were active at 0.5 M NaCl. Tissue-specific *ScAmy* mRNA expression was examined by Real-Time PCR technique and RT-PCR (Reverse transcription polymerase chain reaction) techniques. We found that two techniques showed the same results.The *ScAmy* was expressed at the highest levels in the digestive gland, Labia Palps, gill, mantel respectively and not expressed in muscel.

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