

ORMRUETHAI KAMPONG: CLONING OF NILE TILAPIA (*Oreochromis niloticus*) TRANSGLUTAMINASE cDNA. THESIS ADVISOR : ASST. PROF. MARIENA KETUDAT-CAIRNS, Ph.D. 87 PP. ISBN 974-533-530-4

CLONING/FULL LENGTH cDNA/TRANSGLUTAMINASE

The cDNA encoding transglutaminase from Nile Tilapia (*Oreochromis niloticus*) liver was cloned and sequenced. The cDNA sequence consists of 2,493 or 2,594 nucleotides depend on the 3' UTR. The cDNA encodes an open reading frame of 2,091 nucleotides coding for 696 amino acids. The amino acid sequence of Nile Tilapia liver TGase showed 78%, 59%, 59% and 41% identity with TGase from red sea bream, chum salmon, zebra fish and chicken, respectively. The catalytic triad of Nile Tilapia TGase consists of Cys 272, His 332 and Asp 355 similar to the red sea bream TGase. The putative active site Cys 272 of the enzyme was complete conserved between the two species. The Nile Tilapia TGase had an extension of 1 amino acid at the C-terminal region and some differences in the N-terminal region when compared with red sea bream TGase. The calculated molecular weight of Nile Tilapia TGase is 78.9 kDa with an isoelectric point of 6.31.

School of Biotechnology

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Student's Signature

Advisor's Signature

