

Species classification of the toxic dinoflagellate *Alexandrium tamarense* and *A. catenella* based on their paralytic shellfish toxin profiles

YOUNG-SOO KIM and CHANG-HOON KIM

Dept. of aquaculture, Pukyong National Univ., Busan 608-737 KOREA

The annually outbreak of paralytic shellfish poisoning (PSP) were caused by toxic dinoflagellate *A. tamarense* and *A. catenella* in Korea. The purpose of this study were to investigate the distribution of PSP-causative organisms, *A. tamarense* and *A. catenella* and their species classification. Sediment (Saemangeum, the south open sea) and water samples (southeastern coast) were sampled to establish clonal isolates in 2003. After isolation and purification, strains were cultured under 17°C, f/2 media, 14:10=L:D cycle. PST analysis and species identification were performed by HPLC-FD method and specific DNA probe, respectively.

Thirty-ones strains were isolated from the Saemangeum reclamation, southeastern coast including Jinhae Bay and south open sea. PSTs were detected in all cultured strains. In eight strains from south offshore, major toxin components are GTX5, C1/2 and minors are GTX3/4, dcGTX3, neoSTX. Sixteen strains from south coastal area have GTX1/4, neoSTX, C1/2 as major toxin components and GTX2/3 as minors. Seven strains from the Saemangeum reclamation have GTX5, C1/2 as major toxin components and GTX1/2/3/4 as minors. Thus, among eight south offshore isolates, four *A. tamarense* have more toxic ($38.31 \sim 119.16 \text{ fmol} \cdot \text{cell}^{-1}$) than *A. catenella* ($3.78 \sim 13.13 \text{ fmol} \cdot \text{cell}^{-1}$).

With the previous results of different toxin composition, toxin components and toxin contents, it is toxin profile that could used to diagnosis of regional toxic population and geographical distribution of both *A. tamarense* and *A. catenella* and their toxigenic strains.