

Abstract

Mtx2 is a mosquito-larvicidal toxins produced during vegetative phase of growth by some strains of *Bacillus sphaericus*. Most strains produce Mtx2 proteins that are more toxic to *Culex* and *Anopheles* mosquito larvae and less toxic to *Aedes* larvae. However, some strains such as *B. sphaericus* 2297 toxin that is more active against *Aedes* larvae than *Culex* larvae. These differences might be due to a variation in specific receptor for Mtx2 toxin present on the membrane epithelial gut cells in different larvae species. To identify the protein that functions as a binding protein specific for *B. sphaericus* 2297 Mtx2 toxin, the *Aedes albopictus* mosquito larvae C6/36 cell line was used as a protein source. The analysis of C6/36 cell line by using Sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE), 2-Dimensional gel electrophoresis (2-DE), Western blotting followed by immunodetection indicated that a 75-kDa protein could bind to Mtx2 from *B. sphaericus* 2297. The identification of the 75-kDa protein by Peptide mass fingerprinting (PMF) followed by Liquid Chromatography/Mass Spectrometry-Mass Spectrometry (LC/MS-MS) and database searching showed that the *B. sphaericus* Mtx2 binding protein may be a V-ATPase subunit A protein.