Lactobacillus plantarum strains IS-10506 and IS-20506 isolated from Indonesian traditional fermented milk, dadih, were screened for their ability to remove the cyanobacterial toxin microcystin-LR (MC-LR) from aqueous solution (100 microg/L) at 22 and 37 degrees C. The objective was to study the main environmental factors influencing the metabolic activity of L. plantarum in MC-LR removal. Residual MC-LR was quantified using HPLC. Non-viable cells inactivated by boiling or acid showed only low MC-LR removal (<23 %). Viable L. plantarum strain IS-10506 at pH 7, at 22 and 37 degrees C was able to remove MC-LR, 64% and 43%, respectively, after 30 h. Strain IS-20506 at pH 7, at 22 and 37 degrees C removed 92% and 45 %, respectively, after 30 h. At 37 degrees C, the removal of MC-LR was lower than at 22 degrees C. Supplementation with glucose (1%, 2%, and 3%, w/v) resulted in faster and higher removal of MC-LR at 37 degrees C, while at 22 degrees C it did not improve MC-LR removal. In the presence of 1 % glucose, IS-10506 and IS-20506 demonstrated significantly the most efficient removal of 80% and 65% of applied MC-LR, after 25 and 20 h, respectively, at pH 7, 37 degrees C. Viable cells as well as active metabolism play important roles in removing MC-LR. This finding offers new and economical tools for decontaminating microcystin containing water.

*Keywords*: microcystin-LR, temperature, glucose, dadih, *Lactobacillus plantarum*