Klebsiella pneumoniae is a Gram-negative pathogen that has been recognized as an important agent in food-borne disease and in nosocomial infections, (respiratory and urinary mainly). Food infections and non-food infections caused by K. pneumoniae are difficult to treat due to bacteria resistance to antibiotic treatment. The lactic acid bacteria have been proposed as a bioprotector agent in foods by their antimicrobial activity against pathogens, however, their application has been traditionally restricted against Gram positive bacteria. In this study, the antimicrobial activity of lactic acid bacteria, Weissella confusa and its metabolites against K. pneumoniae, a pathogenic strain isolated from a patient with a diagnosis of pneumonia was evaluated. W. confusa was cultured through fermentation in a commercial substrate (MRS), without aeration, continuous agitation at 33 °C and 100 rpm for 6 hours. Three biological substances, W. confusa strain (W), W. confusa strain plus its metabolites (W+M) and metabolite (M), from fermentation was obtained. The antimicrobial activity of these three substances was measured. The three biological substances showed antimicrobial activity against K. pneumoniae. Significant differences (p <0.05) of the antimicrobial capacity between treatment and evaluation time were found. W and W+M showed the most antimicrobial activity after four hours of fermentation. The results suggest that W. confusa and its metabolites may have potential as biocontrolers in conservation and food safety.