In this study, a total of 206 lactic acid bacteria were isolated on DeMan-Rogosa-Sharpe agar from 20 fermented Turkish "sucuk" samples. Twenty-five isolates were identified as Pediococcus spp. and were tested for their antibacterial activity against Staphylococcus aureus, Micrococcus luteus, Listeria monocytogenes, Bacillus cereus, Salmonella Typhimurium and two strains of Escherichia coli. Only eight strains (32%) of pediococci showed a significant degree of antibacterial activity against L. monocytogenes and S. aureus. According to sodium dodecyl sulfate-polyacrylamide gel electrophoresis results, among eight isolates, two showed different protein profiles. The size of proteins that made the difference was calculated from 60 to 80 kDa. After partial purification, the highest degree of inhibition against L. monocytogenes was caused by the protein fractions collected after 40% ammonium sulfate precipitation. Therefore, these isolates, which produce antimicrobial substances, have a potential especially to control L. monocytogenes in fermented meat products.