The aim of this study was to determine the probiotic potential of exopolysaccharide (EPS) producer Streptococcus thermophilus ST8.01 strain. This strain was able to survive at pH 3 and 1% bile salt. Viable counts were enumerated as 4.80±0.04 and 2.11±0.06 log cfu/mL after exposure to 0.4% phenol and gastric juice at pH 3, respectively. Strep. thermophilus ST8.01 was able to grow at 100 mg/L lysozyme and showed to have high autoaggregation (49.55±6.24%) and hydrophobicity abilities (67.23±7.16%). The ST8.01 strain was also found sensitive to most clinically important antibiotics. Results obtained in this study suggest that Strep. thermophilus ST8.01 strain may be used as a probiotic starter culture to produce dairy products.