Supplementary Data:

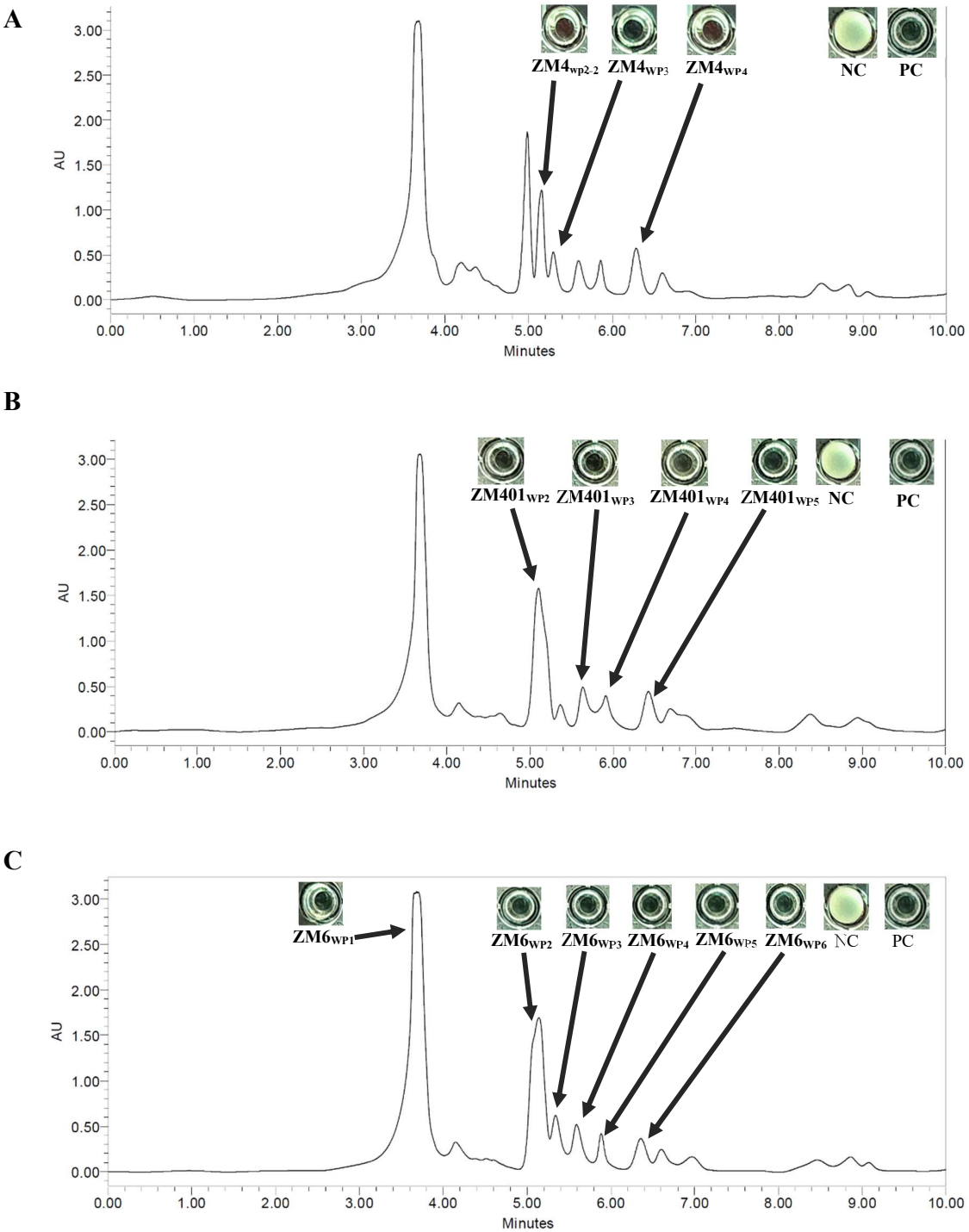

Fig. S1. Antibacterial activity screening of HPLC-fractionated water-phase crude extracts from *Zymomonas mobilis* strains against *Vibrio parahaemolyticus*. Crude extracts from the strains were separated by HPLC, and individual fractions from the water phase (A) ZM4, (B) ZM401, and (C)

ZM6 were collected and evaluated for antibacterial activity using a 96-well plate assay. The positive control (PC) contained enrofloxacin (50 μg mL^{-1}), while the negative control (NC) contained bacterial culture without extract. This figure provides a representative example supporting the activity-guided fractionation strategy employed in this study.

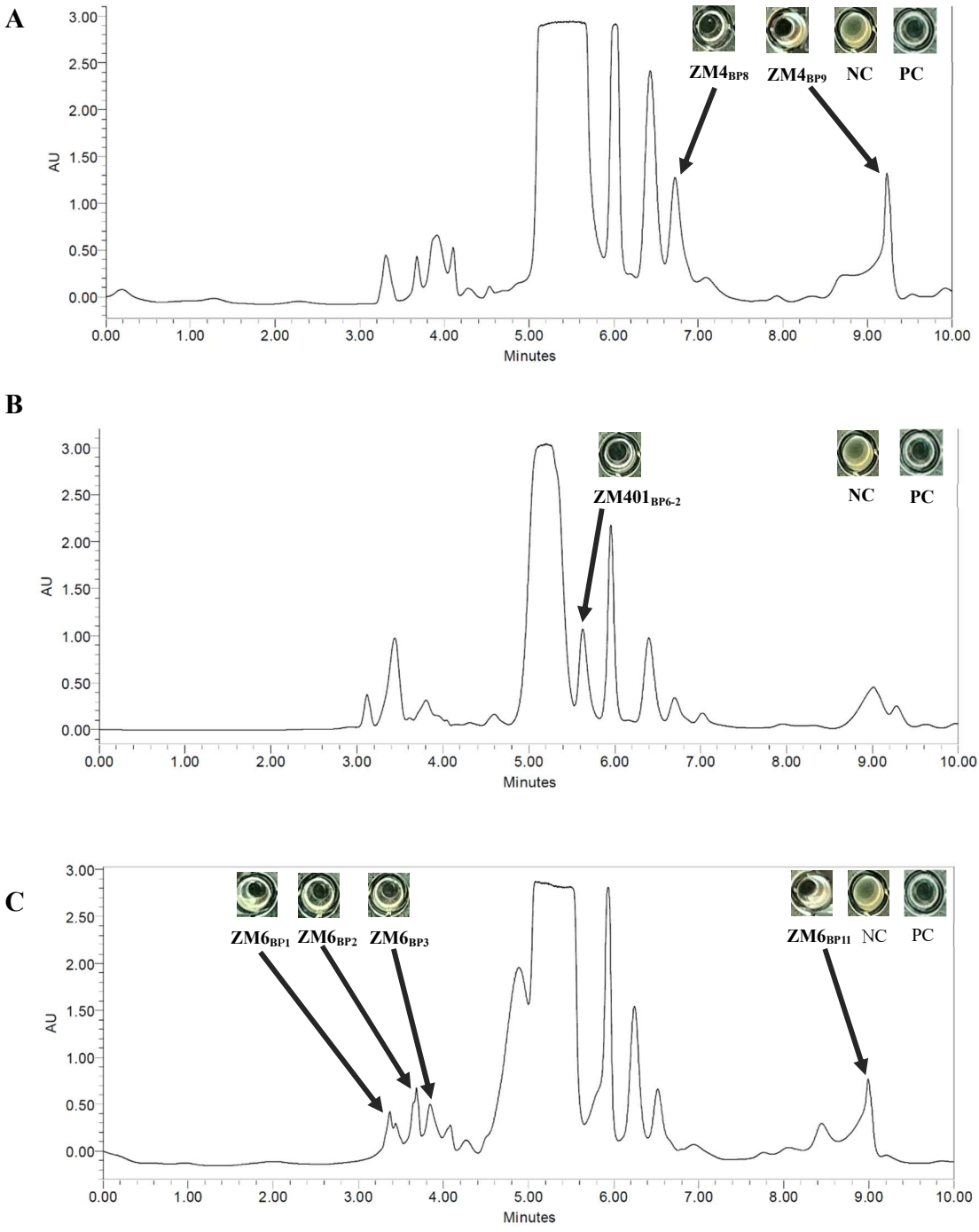

Fig. S2. Antibacterial activity screening of HPLC-fractionated *n*-butanol phase crude extracts from *Zymomonas mobilis* strains against *Vibrio parahaemolyticus*. Crude extracts from strains were separated by HPLC, and individual fractions from the *n*-butanol phase (A) ZM4, (B) ZM401, and (C) ZM6 were collected and evaluated for antibacterial activity using a 96-well plate assay. The positive control (PC) contained enrofloxacin (50 μg mL^{-1}), while the negative control (NC)

contained bacterial culture without extract. This figure provides a representative example supporting the activity-guided fractionation strategy employed in this study.

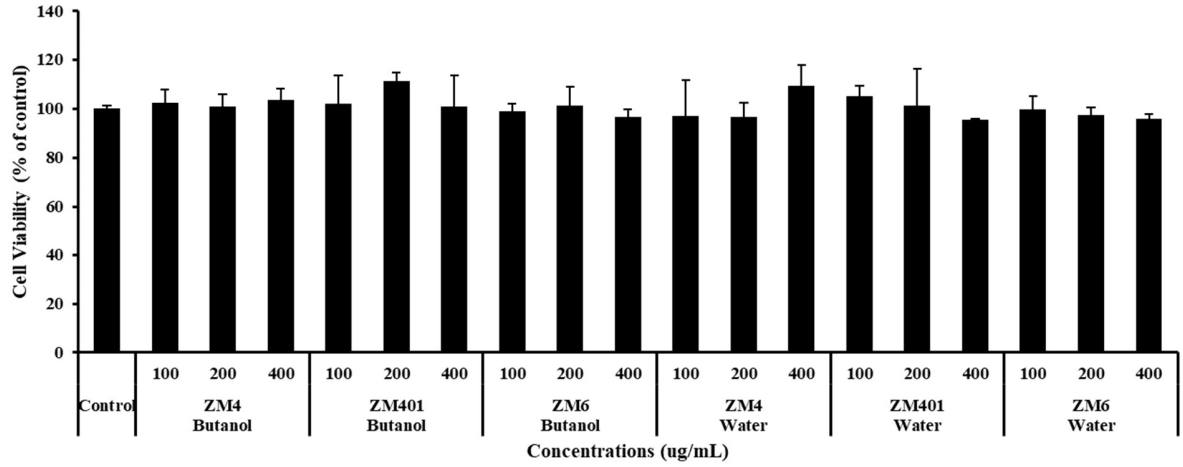

Fig. S3. Cytotoxicity of *Zymomonas mobilis* crude extracts in differentiated L6 myotubes determined by the WST-1 assay. Differentiated L6 myotubes were treated with water-phase and n-butanol crude extracts from *Z. mobilis* strains (ZM4, ZM401, and ZM6) at concentrations of 100, 200, and 400 μg mL^{-1} for 24 h. Cell viability was determined using a WST-1 assay and expressed as a percentage relative to the untreated control (100%). No significant cytotoxicity was observed at any tested concentration, with cell viability remaining above 95% in all treatment groups. Data are presented as the mean ± SD.