Susceptibility of Vibrio parahaemolyticus to various environmental stresses after cold shock treatment.

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Vibrio parahaemolyticus was subjected to cold shock treatment at 20 or 15 degrees C for 2 or 4 h. The effect of cold shock on the survival of V. parahaemolyticus subjected to subsequent low temperature (5 and -18 degrees C) and other adverse conditions (47 degrees C, 6 ppm crystal violet, 1000 ppm H(2)O(2), 25 mM acetic acid and 25 mM lactic acid) was investigated. Regardless of the cold shock treatment, survival of V. parahaemolyticus increased when stored at 5 or -18 degrees C, while no increase in survival was noted for cells cold shocked in the presence of chloramphenicol. Cold shock treatment under the conditions tested, in general, enabled V. parahaemolyticus cells to survive better following subsequent challenge by crystal violet, while the cold-shocked organism was more susceptible to high temperature (47 degrees C), H(2)O(2) and organic acids (lactic and acetic acid) than the non-shocked cells. Furthermore, the temperature and time of the cold shock treatment affected the cold shock response of V. parahaemolyticus.