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Degradation of Collagens, Immunoglobulins, and Other Serum Proteins by Protease of *Salmonella schottmülleri*

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The effect of the extracellular protease of *Salmonella schottmülleri* on human serum constituents such as immunoglobulins, hemoglobin and lysozyme and tissue constituents such as fibronectin and collagens was investigated. This protease degraded collagens(type I and III), fibronectin and immunoglobulins(IgG and IgM). The protease also degraded human hemoglobin and lysozyme, although moderately. Bovine serum albumin was degraded slightly. Thus, the present study demonstrates that the protease is capable of degrading defence-oriented humoral proteins and tissue constituents. This study represents the possible role of *Salmonella* protease as a virulence factor in the pathogenesis of *Salmonella* infections.

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The role of *rpoS* on the survival of *Salmonella* from acidic pH stress with respect to growth phase

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The acidic pH-inducible acid tolerance response(ATR) protects *Salmonella* from external acidic pH to pH3.0. The alternative sigma factor σ^{38}(*rpoS*) has central role for log-phase ATR, and for stationary-phase ATR with cooperation of non-specific histon like protein, H-NS. In this report, we verified the role of *rpoS* on cell protection from acidic pH stress after log-phase. At stationary phase, *rpoS* alone did not contribute to acid resistance of that organism, while RpoS/H-NS doubly dependent acid protective regulon made major contribution. After stationary phase, surprisingly, cells did not need RpoS any more for acid resistance of that organism. Firstly, *rpoS* mutant and *rpoS/hns* double mutant cultured during 2days and more did not show any sensitivity to acid challenge (pH3.0). Furthermore, for the sustained growth in pH4.4 minimal E medium, the combination of two mutation was rather very essential for survival. When we used the cells grown overnight in LB, *rpoS* mutant alone could survive without the loss of population during 10days and more at pH4.4 minimal medium. But, when the cells grown in minimal E medium were used, *rpoS/hns* double mutant was best survivor, while the viability of wild type cell and *rpoS* mutant starts decrease. These results suggest the role of *rpoS* for protective mechanism of *Salmonella* from acidic pH is essential just at the exponential growth phase, and RpoS(and H-NS) maybe participate in the production of fermentative end products, which could cause to decrease internal pH at acidic environment.