Salmonellosis
Research on salmonellosis discussed by scientists at Indian Institute of Science

2008 SEP 29 -- Fresh data on salmonellosis are presented in the report 'The LysR-type transcriptional regulator Hrg counteracts phagocyte oxidative burst and imparts survival advantage to Salmonella enterica serovar Typhimurium.' According to a study from Bangalore, India, "LysR-type transcriptional regulators (LTTRs) are one of the key players that help bacteria adapt to different environments. We have designated STM0952, a putative LTTR in Salmonella enterica serovar Typhimurium (S. typhi murium), as hydrogen peroxide resistance gene (hrg)."

"A hrg knockout mutant of S. typhi murium was sensitive to oxidative products of the respiratory burst, specifically to H(2)O(2). The hrg mutant is profoundly attenuated in a murine model of infection and showed decreased intracellular proliferation in macrophages. It also induced increased amounts of reactive oxygen species and co-localization with gp91phox in the macrophage cell line, when compared to the wild-type. A strain overexpressing the hrg gene showed a survival advantage over the wild-type Salmonella under H(2)O(2)-induced stress," wrote A. Lahiri and colleagues, Indian Institute of Science.

The researchers concluded: "Microarray analysis suggested the presence of an Hrg regulon, which is required for resistance to the toxic oxidative products of the reticuloendothelial system."

Lahiri and colleagues published the results of their research in Microbiology (The LysR-type transcriptional regulator Hrg counteracts phagocyte oxidative burst and imparts survival advantage to Salmonella enterica serovar Typhimurium. Microbiology, 2008;154(Pt 9):2837-46).

For additional information, contact A. Lahiri, Centre for Infectious Disease Research and Biosafety Laboratories, Dept. of Microbiology and Cell Biology, Indian Institute of Science, Bangalore, India.

The publisher of the journal Microbiology can be contacted at: Society General Microbiology, Marlborough House, Basingstoke Rd., Spencers Woods, Reading RG7 1AG, Berks, England.

Keywords: India, Bangalore, Salmonellosis, Salmonella.

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