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The role of H₂S in the recovery of *Salmonella* spp. from animals

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The ability of a microorganism to produce H₂S is an important taxonomic characteristic within the family of Enterobacteriaceae with *Citrobacter* spp., *Proteus* spp. and *Salmonella* spp. considered major H₂S-producers. H₂S is a very toxic compound for mammalian cells helping perhaps, bacteria producing it to colonize or damage tissues thus playing a role in the development of gastroenteritis and ulcerative colitis. The toxicity of H₂S to mammalian cells is comparable to that of cyanide when their LD50 is determined using rodents. About 97.7% of *Salmonella* spp. serovars other than *S. choleraesuis* and *S. typhi* produce H₂S. Loss of H₂S production is observed in environmental strains of *Salmonella* spp. resulting from mutations or its “masking” by acid production during sugar fermentation on frequently used culture media. In this study, five (5) lactose positive *Salmonella* spp. and three (3) *E. coli* isolates recovered using ISO 6579:2002 (Annex D), appeared H₂S negative when cultured on XLD and SS agars but they produced it when co-cultured with typically strong H₂S-producing *Salmonella* isolates. This observation emphasizes possible failures in the identification of *Salmonella* pathogenic serovars and the possibility of a synergistic increase in the pathogenicity of less pathogenic serovars or other enterobacteria.

Biography

Grammato Evangelopoulou is a Military Veterinarian specialized in Food Microbiology. Currently, she is carrying out her Doctoral studies in the Faculty of Veterinary Medicine, University of Thessaly, Greece. Her Research interests focus on pig salmonellosis and its impact to Public Health. She is a Member of the American Society for Microbiology. Her work is supervised by Professor A R Burriel, Director of The Microbiology and Parasitology Laboratory, University of Thessaly.

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