



Salmonella typhi Characteristics and Cultural Methods

Weidong Wang*

Department of Agriculture, Shanghai University, Shanghai, China

DESCRIPTION

Salmonella is a member of the Enterobacteriaceae family. This is a Gram-negative bacillus, motile and non-lactose fermentor. This genus can be divided into two species (*S. enterica* and *S. bongori*) based on their phenotypic profile. It causes acute gastroenteritis, and when *Salmonella* infection becomes invasive, it can affect the bloodstream (bacteremia), bones (osteomyelitis), joints (septic arthritis), brain, or "meningitis" of the nervous system. *Salmonella* is classified as "typhoid" or "non-typhoid" based on its serotype.

Salmonella typhi and Paratyphoid A are host-restricted pathogens whose host is humans. Unlike other *Salmonella* serotypes that primarily cause localized intestinal inflammation and diarrhea, *Salmonella typhi* and paratyphoid A, B, and C characteristically enter the bloodstream from the gastrointestinal tract, survive, and proliferate in macrophages, progresses in 1%-4% of cases. Typhoid fever *Salmonella* is estimated to cause over 200,000 deaths each year. Typhoid fever is most common in densely populated urban communities where drinking water is contaminated with human faeces. Rising resistance to antimicrobials threatens to increase mortality and disease burden in the years to come. Inexpensive vaccines and improved drinking water quality and food safety can reduce the burden of typhoid fever.

Ingested with food, pathogenic *Salmonella* enter the stomach acid barrier, survive, enter the lining of the small and large intestine, and produce toxins. Epithelial cell infiltration stimulates the release of proinflammatory cytokines that trigger an inflammatory response. An acute inflammatory response can cause diarrhea and lead to ulceration and mucosal destruction. Bacteria can spread from the gut and cause systemic disease.

In 2000, typhoid fever caused more than 20 million cases of her illness and more than 200,000 deaths, while paratyphoid caused an estimated 5.4 million cases worldwide. Infants, children, and adolescents in South Central and Southeast Asia had the greatest disease burden. Typhoid fever and paratyphoid fever usually present as clinically similar acute febrile illnesses. Accurate diagnosis relies on laboratory confirmation. Paratyphoid fever is usually the result of infection with *S typhi*. Recent reports showing increased incidence of paratyphoid A and *S. paratyphoid* A, which causes enteric fever in developing Asian countries, debunked the previous belief that paratyphoid fever is less severe than typhoid fever. To make a definitive diagnosis, the organism must be cultured and identified. Clinical symptoms alone are not enough. Although blood cultures are less sensitive than bone marrow cultures and negative results are often obtained even with positive bone marrow cultures, blood cultures are usually not recommended for patient diagnosis and for epidemiologic studies of the burden of typhoid and paratyphoid fever is a practical first choice. Due to the lack of good diagnostic tools and the often lack of clinical and laboratory facilities in endemic areas, enteric fever is a common problem in many parts of the world, especially in sub-Saharan Africa. The magnitude of the burden on the body is often not fully understood. Aerobic and facultative anaerobes grow radially on simple media in the range of pH 6-8 and temperature (optimally 37°C). Colonies are large, round, 2-3 mm in diameter, slightly convex, smooth, and more translucent than colonies of *E. coli*. On nutrient agar and blood agar, after 24 hours at 37°C, colonies of most *Salmonella* strains are medium-sized, 2-3 mm in diameter, off-white, moist, with smooth convex surfaces and complete margins.

Correspondence to: Weidong Wang, Department of Agriculture, Shanghai University, Shanghai, China, E-mail: wangw@gmail.com

Received: 01-Nov-2022, Manuscript No. JPPM-22-19310; **Editor assigned:** 04-Nov-2022, PreQC No. JPPM-22-19310 (PQ); **Reviewed:** 18-Nov-2022, QC No. JPPM-22-19310 (R); **Revised:** 25-Nov-2022, Manuscript No. JPPM-22-19310; **Published:** 02-Dec-2022, DOI: 10.35248/2157-7471.22.13.651.

Citation: Wang W (2022) *Salmonella typhi* Characteristics and Cultural Methods. J Plant Pathol Microbiol. 13:651.

Copyright: © 2022 Wang W. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.