New Salmonella Serotype: Salmonella enteritidis ser. Ordonez

SYLVIA F. BARTES, W. J. MARTIN, P. E. O’CONNOR, L. MARSDEN, AND H. VOGEL

Enteric Bacteriology Unit, National Communicable Disease Center, Atlanta, Georgia 30333, and Bureau of Laboratories, New York City Department of Health, New York, New York 10016

Received for publication 30 April 1969

The antigenic formula of a new serotype, Salmonella enteritidis serotype Ordonez, was characterized as (I), 13, 23, 37: y: l, w.

The organism to be described is a newly characterized serotype (ser.) of Salmonella. The culture (2227-68) was recovered from the stool of a 38-year-old female who had been hospitalized. The source of infection was not disclosed.

In this note, the system of nomenclature employed for the genus Salmonella is that proposed by Kauffmann and Edwards (5) and Borman, Stuart, and Wheeler (1). The species S. enteritidis includes all salmonellae other than S. typhi and S. choleraesuis. According to this system of nomenclature, serotypes of S. enteritidis are written as follows: S. enteritidis ser. Heidelberg, S. enteritidis ser. Typhimurium, etc. The infrasubspecific designations are capitalized for reasons of clarity only.

The following biochemical characteristics of culture 2227-68 show it to be a typical, motile member of subgroup I of the genus Salmonella as defined by Kauffmann (3, 4). This strain failed to produce indole, was methyl red-positive and Voges-Proskauer-negative, grew on Simmons citrate medium, and produced hydrogen sulfide. It did not produce urease or phenylalanine deaminase. Nitrate was reduced to nitrite, and lysine, arginine, and ornithine were decarboxylated. When tested by the method of Kauffmann and Petersen (6), D-tartrate, sodium citrate, L-tartrate, and mucate were utilized in 1 day. Conversely, sodium malonate and L-tartrate were not utilized. It failed to grow in KCN medium, and tests for β-galactosidase activity (ONPG test) were negative (7). Kohn gelatin was not liquefied. Glucose, dulcitol, sorbitol, arabinose, rhamnose, maltose, mannitol, xylose, inositol, and trehalose were fermented and gas was produced within 24 hr. Cellobiose was utilized after 6 days of incubation. Lactose, sucrose, salicin, adonitol, raffinose, and glycerol were not fermented.

Serological examination indicated that isolate 2227-68 belonged to O group G, reacting in antisera 1, 13, 23 and with absorbed antisera for 1, 23, and 37 but not 22 and 36. Further testing showed that the O antigens were agglutinated to a titer of 1:800 with S. enteritidis ser. Worthington O antisera (1, 13, 23, 37). In subsequent absorption tests, all agglutinins were removed from this antisera.

The flagellar (H) antigens of this strain were designated as y: l, w. The phase 1 antigens were agglutinated to a titer of 1:12,800 by H antisera of phase 1 (y) of S. enteritidis ser. Madelia. The homologous titer of phase 1 of serotype Madelia was 1:6,400, and all agglutinins were removed by absorption tests with the phase 1 antigens of 2227-68. Phase 2 antigens of this isolate were agglutinated in diagnostic dilutions by antisera containing agglutinins for antigens of the l-complex. When tested in absorbed single-factor antisera, agglutination was readily obtained in diagnostic dilution of factor w antisera only. No agglutination was observed with single factors v, z₁₈, z₁₃, and z₄₀. The phase 2 antigens were agglutinated by phase 1 antisera of serotype Worthington (l, w) to a titer of 1:12,800. The homologous phase 1 titer of serotype Worthington was 1:6,400. Subsequent absorption tests removed all H agglutinins from that antisera.

Hence the antigenic formula of culture 2227-68 was determined to be (I), 13, 23, 37: y: l, w, and the name S. enteritidis ser. Ordonez was applied to it.

LITERATURE CITED