

Pathogenicity of Different Serogroups of Avian Salmonellae in Specific-Pathogen-Free Chickens

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SUMMARY. The pathogenicity of one isolate of *Salmonella typhimurium*, four isolates of *Salmonella heidelberg*, three isolates of *Salmonella kentucky*, two isolates of *Salmonella montevideo*, one isolate of *Salmonella hadar*, and two isolates of *Salmonella enteritidis* (SE), one belonging to phage type (PT) 13a and the other to PT34, was investigated in specific-pathogen-free chicks. Three hundred eighty-four chicks were separated into 16 equal groups of 24 chicks. Thirteen groups were inoculated individually with 0.5 ml of broth culture containing 1×10^7 colony-forming units (CFU) of either *S. typhimurium* (one source), *S. heidelberg* (four sources), *S. montevideo* (two sources), *S. hadar* (one source), *S. kentucky* (three sources), SE PT 13a (one source) or SE PT 34 (one source) by crop gavage. Two groups of 24 chicks were inoculated in the same way with 1×10^7 CFU of SE PT4 (chicken-CA) and *Salmonella pullorum*. Another group of 24 chicks was kept as an uninoculated control group. The chicks were observed daily for clinical signs and mortality. Isolation of salmonella was done from different organs at 7 and 28 days postinoculation (DPI). All the chicks were weighed individually at 7, 14, 21, and 28 DPI. Two chicks chosen at random from each group were euthanatized and necropsied at 7 and 14 DPI and all the remaining live chickens, at 28 DPI. Selected tissues were taken for histopathology at 7 and 14 DPI. Dead chicks were examined for gross lesions and tissues were collected for histopathology.

Chicks inoculated with *S. pullorum* had the highest mortality (66.66%), followed by *S. typhimurium* (33.33%). Chicks inoculated with *S. heidelberg* (00-1105-2) and SE PT4 (chicken-CA) had 12.5% mortality and 8.3% mortality, respectively, with SE PT 13a. Ceca were 100% positive for salmonellae at acute or chronic infection compared with other organs. Mean body weight reduction ranged from 0.67% (inoculated with *S. kentucky* 00-926-2) to 33.23% (inoculated with *S. typhimurium* 00-372) in the inoculated groups at different weeks compared with uninoculated controls. Gross and microscopic lesions included peritonitis, perihepatitis, yolk sac infection, typhilitis, pneumonia, and enteritis in some groups, especially those inoculated with *S. typhimurium*, *S. heidelberg* (00-1105-2), SE PT4 (chicken-CA), and *S. pullorum*.

RESUMEN. Patogenicidad de los diferentes grupos serológicos de *Salmonella* aviar en aves libres de patógenos específicos.

Se investigó, en aves libres de patógenos específicos, la patogenicidad de un aislamiento de *Salmonella typhimurium*, cuatro de *Salmonella heidelberg*, tres de *Salmonella kentucky*, dos de *Salmonella montevideo*, uno de *Salmonella hadar*, y dos de *Salmonella enteritidis* (uno perteneciente al fagotipo 13a y otro perteneciente al fagotipo 34). Trescientos ochenta y cuatro pollos fueron divididos en 16 grupos de 24 aves cada uno. Trece de estos grupos fueron inoculados directamente en el buche con 0.5 ml de caldo de cultivo que contenían 1×10^7 unidades formadoras de colonias (UFC) de uno de los siguientes grupos serológicos: *S. typhimurium* (un grupo), *S. heidelberg* (cuatro grupos), *S. montevideo* (dos grupos), *S. hadar* (un grupo), *S. kentucky* (tres grupos), *S. enteritidis* del fagotipo 13a (un grupo), o *S. enteritidis* del fagotipo 34 (un grupo). Dos de los grupos fueron inoculados por la misma vía con 1×10^7 UFC de *S. enteritidis* del fagotipo 4 y *Salmonella pullorum*. Otro de los grupos fue usado como control negativo no inoculado. Las aves fueron observadas diariamente para detectar