

دراسة مقارنة عن تأثير الانتجين واحد والانتجين رقم ١٢  
على استخراج الدجاج الحامل لميكروب السالمونيلا بلورم

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تم استخراج ثلاث عترات مختلفة من السالمونيلا بلورم . واحدة كاملة ، وواحدة  
ينقص فيها أنتجين واحد والآخرى أنتجين ١٢ اثنين . ووجد ان انتجين ١٢ أكثر  
تأثيرا فى الاختبارات السيرولوجيما التى أجريت لاستخراج الدجاج الحامل لميكروب  
السالمونيلا بلورم .



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COMPARING STUDIES BETWEEN THE INFLUENCE ROLE OF  
SOMATIC FACTORS O-1 AND 12<sub>2</sub> ON THE AGGLUTINATION  
REACTION FOR DETECTING SALMONELLA-PULLORUM  
CARRIERS

(With One table )

By

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SUMMARY

- 1-Trials for studies the influence role of somatic factors O-1 and 12<sub>2</sub> on the agglutination reaction for detecting salmonella pullorum carriers.
- 2-Three strains were used one full strain, one lacking O-1 and the last lacking 12<sub>2</sub>
- 3-Antigen from each strain was prepared and the tube agglutination made on 100 chickes suspected to be salmonell-pullorum carriers.

INTRODUCTION

Salmonella pullorum carriers can be detected by agglutination tests using a full antigen. Salmonella gallinarum-pullorum is the non motile species of genus salmonella which infected poultry. KAUFMAN (1961) investigated that the antigenic structure of salmonella pullorum is O-1, 9, 12 and again factor 12 is divided into 12<sub>1</sub>, 12<sub>2</sub>, 12<sub>3</sub>.

The first evidence of antigenic form variation of salmonella pullorum was provided by YOUNIE (1941) BYRNE (1943) soon confirmed the presence of strains with differing antigenic composition. EDWARDS and BRUNER (1946) explored the nature of the antigenic characteristics of salmonella pullorum to be variation in 12<sub>2</sub> and later extend this observation EDWARDS et al. (1948).



Variation in factor O-1 have been decided by **KOSTERS** and **GISSLER**(1958). **BASSIOUNI ET AL.** (1966) concluded that there is a distinct influence of the factor O-1 on the results of agglutination.

For this various variation in factor  $12_2$  and O-1 the aim of this work to find out which factor is more influenced in the agglutination tests used for detection of carriers.

#### MATERIAL AND METHODS

1- The salmonella gallinarum pullorum strains. Three salmonella gallinarum- pullorum strains 23/72, and 54/72 and 67/72 were isolated. These strains proved to be in pure form from ground and to have the following antigens.

23/72	1, 9, $12_1$ , $12_2$ , $12_3$
54/72	1, 9, $12_1$ , ----, $12_3$
67/72	-, 9, $12_1$ , $12_2$ , $12_3$

The sera were kindly supplied from VET. MED. PRUFUNG INSTITUT, BERLIN.

The strains proved to be constant in their antigenic structure, and to determine their antigenic structure a pure culture is made on Brilliant green phenol red agar and incubate over night at 37°C., slide and tube agglutination tests were made.

#### 2- Preparation of tube agglutination antigens.

All of the three strains 23/72, 54/72 and 67/72 were cultured and incubated at 37°C for 24-48 H. Washing of the culture with 0.5% phenolised normal saline. Sterility tests were made. Centrifugation for 2 hours at 3000 r/min. Repeat washing with 0.5% phenolised saline and centrifugation. The precipitates of the antigens were diluted with phenolised

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normal saline until reach a degree of turbidity corresponds that of barium sulfate suspension prepared from 97 parts of 1% H<sub>2</sub> So 4 solution and 3 parts of 1% barium chloride solution WILLIAM and MAC DONALD (1955) and GERSHMAN ET AL.(1962).

3- The tube agglutination tests:-

100 serum samples were prepared and serial dilution were made from every serum and the three from 1 : 20 to 1: 10240 EDWARDS and BRUNER (1946) WILLIAM and MAC DONALD, (1955) and CERSHMAN ET AL. (1962).

### RESULTS

The result of tube agglutination tests, were shown in table (1).

### DISCUSSION

The application of the agglutination tests with the different antigens show variation in their results.

It is clear from the results that using a full complete antigen containing all factors give a high titer of positivity with strong reaction. However. Using of antigens lacking either O-1 or O-12<sub>2</sub> give a low titer of positivity with weak reaction: Again it is very clear that the results of using antigen lacking O-1 give a higher stronger titer than those results given by antigen lacking O-12<sub>2</sub>. From this results it is evaluated that the influence role of O-12<sub>2</sub> is more higher than O-1.

The lowest and titer with the complete full antigen is 1:320 and the highest and titer is, 1, 10240. The lowest and titer with antigen lacking O-1 is 1 : 80 and the highest and titer is 1 : 1280. In comparison with the lowest and titer of antigen lacking 12<sub>2</sub> is 1 : 20 and the highest and titer is 1 : 160.

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