NOTES

ESCHERICHIA COLI 0124 : K72(B) : H12 ; A NEW SEROTYPE OF E. COLI

The biochemical properties and serological characters of the two strains of E. coli with a hitherto undescribed new antigenic structure 0124 : K72 : H12 isolated in Japan by the authors will be mentioned in this paper.

Strain 93-59 was isolated from a stool of an adult patient of diarrhea in April 1959. Strain 349-59 was on the other hand isolated from a stool of an apparently normal adult in September 1959. Cultures of 93-59 and 349-59 are Gram negative non spore forming peritrichiously flagellated motile rods fermenting glucose promptly with gas production. They fermented lactose, mannitol, xylose, arabinose, rhamnose, maltose, sorbitol and salicin promptly. Culture of 93-59 fermented adonitol after two days while inositol, sucrose and dulcitol were not attacked after twenty one days of incubation. Culture of 349-59 fermented sucrose and dulcitol within two days but it does not acidify adonitol and inositol on prolonged incubation. They gave "++--" reactions in Imvic system tests. Gelatin was not liquefied. Hydrogen sulfide was not produced on Kligler's iron agar. Urea was not decomposed. Nitrate was reduced.

The results of reciprocal agglutinations and absorption tests revealed that the 0 antigens of strain 93-59 are completely identical with those of the standard strain of E. coli 0124. Living or formalinized cultures of 93-59 and 349-59 were 0 inagglutinable, but they become fully 0 agglutinable after the treatment at 100°C for 1 hour. A standard K72 (B17) antiserum was absorbed completely by the formalinized and/or heated cells (at 100°C for 2-1/2 hours) of the strain 93-59 and vice versa. Therefore the 0 and K antigens of strain 93-59 were identified as 0124 : K72(B).

H antigens of the culture 93-59 reacted in H1 and H12 antisera of E. coli. Detailed H antigenic analysis indicated that the H antigens of strain 93-59 should be classified as H12 although they were not completely identical with those of the standard strain (Bi 316-42) of H12. The H12 antigens of the strains of E. coli 049 (U 12-49), 087 (H40) and 0104 (H519) completely absorbed the H antiserum of strain 93-59, but a weak specific factor remained after the absorption of the H12 antigens of E. coli 025 (E47a).

Serologically the culture 349-59 behaved identically with the culture 93-59.

From the results mentioned above the authors had identified the strains of 93-59 and 349-59 as E. coli 0124 : K72 (B) : H12. Dr. Ewing (1959) identified the H antigens of the culture 93-59 mentioned here as H 12.

E. coli 0124 was for the first time established by Ewing (1953) and in the report he had described three serotypes, namely the serotypes having the H32 antigens and unidentified H antigens and non motile 0 form. Additional two serotypes 0124 : K72 (B) : H19 and 0124 : K72 (B) : H30 had been listed by Ewing and Tanner (1955). Dr. Órskov (1959) informed one of the authors (H. M.) that the serotype 0124 : K72 (B) : H12 was an as yet unreported one. Thus it was concluded that our strains 93-59 and 349-59 having
H12 antigen are a new serotype of *E. coli* belonging to 0124.

**Summary**: A hitherto undescribed new serotype of *E. coli* with antigenic structure 0124, K72 (B): H12 isolated in Japan has been reported.

**REFERENCES**


EWING, W. H. & TANNER, K. E. (1955) : Unpublished data, cited from Identification of Entero-


ØRSKOV, F. (1959) : Personal communication.

*Nagano Prefectural Fukushima Public Health Center, Nagano Prefecture, Japan*

HIDEKI MATSUMOTO

SEIKI HARA

Received : December 3rd, 1959