Distribution of *Pseudomonas aeruginosa* Serotypes in Israel

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The serotyping of the *Pseudomonas aeruginosa* strains isolated from various clinical materials is of great epidemiological importance, and distribution of the serotypes of *P. aeruginosa* has been reported throughout the world during the past 20 years (1–15). We have serotyped 668 *P. aeruginosa* strains isolated in Israel from diverse clinical specimens. This is the first report dealing with the distribution of the serotypes of *P. aeruginosa* in Israel.

The 668 *P. aeruginosa* strains were isolated from various clinical specimens such as urine, pus from wounds or ears, faeces, sputum or throat swab from respiratory tract or blood, in Rothschild University Hospital, Nahariya Government Hospital and Poriah Government Hospital, Israel, during the years 1972–1976. During this period there was no epidemic incidence of *P. aeruginosa* in any of these hospitals. The strains with the following characteristics were identified as *P. aeruginosa*: Gram-negative motile rods which oxidized glucose, but not maltose, reduced nitrate to nitrite, gave positive cytochrome-oxidase reaction; they did not decarboxylase lysine in lysine-iron agar, but dehydrolysed arginine in bacto arginine assay medium;4 gelatin was liquefied; indole was not formed; they did not produce H₂S in TSI agar; gluconate was oxidized; aesculin was not hydrolysed.

The antisera used were prepared as follows: the *P. aeruginosa* strains sent from Lányi, representing his serotypes 01, 03a, 3b, 03a, 3d, 04a, 4b, 04a, 4d, 05a, 0b, 5c, 06, and 07a, 7b, were cultured on trypticase soya agar (Difco) containing 5% horse blood and incubated at 32°C for 18 hr. The culture was harvested, washed once with saline and then boiled for 2 hr. The boiled suspension was injected intravenously into rabbits, repeatedly with increasing dosages. Ten days after the last injection the rabbits were bled and the serum was stored at –20°C with 0.5% phenol.

The slide agglutination test, using living cultures grown on nutrient agar at

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37 C for 18 hr, was employed for the serotyping. The antisera were diluted from 1:20 to 1:50. The working solutions agglutinated the homologous antigens within one to four seconds. Reaction due to minor common antigenic relationships was weaker and it did not interfere with the typing. All strains were typed immediately after their isolation.

The distribution of the serotypes among all the strains investigated is shown in Table 1. Also listed in Table 1 is the relationship of the serotypes according to Lányi, Habs, Verder and Evans, Fisher, Homma and Sandvik (9, 10, 11).

The most frequent serotype encountered was 01 (19.4%), after that was 07a, 7b (18.8%) and thirdly 03a, 3d. Fifty-two strains (7.7%) showed polyagglutination. There were 46 nontypable strains (6.6%) with the antisera used.

The incidence of the serotypes according to their sources is presented in Table 2. Approximately two-thirds of the strains came from urine and serotype 01 was the most frequent among these. The second common type from the urine was 03a, 3d. The strains isolated from other sources, such as faeces, pus from wounds or ears, frequently belonged to 07a, 7b.

Our results clearly demonstrate that the distribution of the serotypes of Pseudomonas aeruginosa in Israel is very similar to that in other countries, e.g. United States of America, Netherlands, West Germany, Hungary, Czechoslovakia, Denmark, Norway, Great Britain, and Japan (3, 4, 8–14).
REFERENCES


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