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Characterization of EO-1 Strains (*Pseudomonas kingii*) Isolated from Clinical Specimens and the Hospital Environment

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Ten strains of the pseudomonad designated EO-1 and named *Pseudomonas kingii*, which were isolated from clinical specimens and the hospital environment, are described.

The designation EO-1 (eugonic oxidizers group number one) was applied to a group of pseudomonads first characterized by King (3) and refers to the ability of the organism to grow well on most media, with oxidative utilization of a wide range of carbohydrate substrates. Further biochemical characterization was performed by Jonsson (Ph.D. Thesis, Univ. of North Carolina, Chapel Hill, 1965), who proposed the name *Pseudomonas kingii* for this group. An increased awareness among medical bacteriologists of this organism is due to its recent recovery from con-

TABLE 1. *Characteristics of 10 strains of EO-1 (Pseudomonas kingii)*[a]

Test	No. of strains positive	Test	No. of strains positive	Test	No. of strains positive	Test	No. of strains positive
Glucose (1%, OFBM)	10	Oxidase	9[b]	2.5% NaCl	10	Malonate	10
Fructose	10	Arginine	0	*p*H 5.6	10	Succinate	10
Galactose	10	Lysine	10	Cetrimide	8	Fumarate	10
Mannose	10	Ornithine	0	Growth at 42 C	5	Adipate	10
Rhamnose	0	Phenylalanine	0	Fluorescence	0	Suberate	10
Xylose	10	Esculin	9	Brown pigment	0	D-Malate	10
Lactose	10	Lipase	10	Yellow pigment	1	DL-Lactate	10
Sucrose	9	Amylase	0	Glucose (BMM)[c]	10	Citrate	10
Maltose	10	Deoxyribonuclease	0	L-Arabinose	10	Pyruvate	10
Mannitol	10	Lecithinase	8	D-Xylose	9	β-Alanine	10
Lactose (10%, PAB)	10	Gelatinase	5	Sucrose	10	L-Arginine	10
Glucose (SDA)	10	Caseinase	6	Maltose	0	Asparagine	10
Gluconate (GS)	1	Motile	10	D-Trehalose	10	DL-Aspartate	10
ONPG	10	Hemolysis	1	D-Mannitol	10	L-Glutamate	10
Indole	0	SS Agar	0	i-Inositol	10	Glycine	0
Hydrogen sulfide	0	DC Agar	0	Acetate	10	L-Lysine	10
Urea	3	MacConkey Agar	10	Propionate	8	DL-Methionine	0
Nitrite	5	TTC	3	Butyrate	10	DL-Serine	8
Nitrogen gas	0	6.5% NaCl	0			DL-Valine	5
						Acetamide	7

[a] Recovered in this laboratory and received from bacteriology laboratories in New York City through the courtesy of E. Bottone, M. Carr, and S. Rosenthal. Features were identical to reference strain EO-1 B3616 kindly supplied by R. F. Weaver. Symbols: OFBM, OF Basal Medium; PAB, Purple Agar Base; SDA, Sellers Differential Agar; GS, gluconate substrate; ONPG, *o*-nitrophenyl-beta-galactopyranoside; SS Agar, Salmonella-Shigella Agar; DC Agar, Desoxycholate Agar; TTC, triphenyl tetrazolium chloride; BMM, basal mineral medium.

[b] Three strains gave a weak-positive test.

[c] For the remaining entries in this column and all of those in the next column, assimilation was tested for.

taminated detergent solutions in urinary catheter kits, its isolation from urine cultures, and the demonstration of its potential pathogenicity (2). A review of the literature by Hardy, Ederer, and Matsen (2) revealed that the organism has been responsible for urinary tract infections, pneumonitis, and endocarditis.

Because EO-1 has physiological features similar to other pseudomonads and *Acinetobacter* (*Herellea vaginicola*), the characteristics (Table 1) of 10 strains recovered from various sources are presented as an aid to its proper identification in the clinical laboratory. Of these strains, three were isolated from blood samples, two from urine samples, and one each from a leg wound, an abscess, benzylkonium chloride solution, rotting wood around a sink, and the floor under a bed pan hopper.

Some of the organism's salient features include presence of lysine decarboxylase, variable oxidase activity, lack of growth on Salmonella-Shigella Agar, ability to utilize a wide range of organic compounds as its sole source of carbon and energy, and resistance to polymyxin, colistin, and gentamicin. The organism was consistently sensitive to chloramphenicol and methenamine mandelate and showed variable susceptibilities to novobiocin, nalidixic acid, kanamycin, and neomycin. Only one strain demonstrated an intracellular and diffusible yellow pigment evident on most media employed. Pigmentation is recognized (2, 3; V. Jonsson, Thesis, Univ. of North Carolina, 1965) as being variable but nondiffusible and developing only on iron-containing media such as triple sugar-iron-agar. It is of interest that the EO-1 group could not be distinguished from *P. cepacia* (*P. multivorans*; references 1, 5) by any of the characters that were examined with *P. cepacia* 382 (ATCC 17760) (kindly supplied by M. Doudoroff) as reference, a feature previously recognized by Pickett and Pedersen (4). Pigmentation in *P. cepacia* is described (5) as variable, water-soluble, and including colors other than yellow.

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