Differentiation of Atypical *Pseudomonas aeruginosa* from *Alcaligenes fecalis* Using a Histone-Like Fraction from *Carica papaya* Seeds. (31340)

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Previous experiments demonstrated the hemagglutinating and bacteria agglutinating properties of *Carica papaya* seed extracts. A histone-like fraction containing the bacterial agglutinin only was separated (PSH). This fraction was tested against single strains of *Shigella dysenteriae, Shigella paradysenteriae, Salmonella typhi, Salmonella paratyphi, Salmonella schottmuelleri, Escherichia coli, Aerobacter aerogenes, Proteus vulgaris* and *Alcaligenes fecalis*. Only *Alcaligenes fecalis* was agglutinated(1).

The possibility of using this fraction in the differentiation of atypical strains of *Pseudomonas aeruginosa* from *Alcaligenes fecalis* led us to investigate the following: (1) Whether *A. fecalis* strains other than the one already tested were also agglutinated by PSH; (2) The reaction of PSH with various known strains of *Ps. aeruginosa* and (3) The reaction of PSH with various unidentified strains which could be either *A. fecalis* or atypical strains of *Ps. aeruginosa*.

The work presented here describes the reactions to PSH of non-fermenting Gram-negative rods isolated from different sources.

Materials and methods. A modification of the methods described by Brillantine(2) and Renkonen(3) for the obtention of phyto-hemagglutinins was used. Seeds from ripe fruits were cleaned, washed, dried in the sun and weighed. Ten ml of 0.9% saline containing 0.1% sodium azide or 1:10,000 thimerosal were added per gram of seeds and ground in an Osterizer for 2 minutes. Most of the dark outer shell material was then removed by straining through nylon mesh. The suspension was further homogenized at room temperature (23°C). After standing for 2 hours at room temperature and overnight in the refrigerator (4°C), the mixture was brought to room temperature and ethyl alcohol (95%) was added while mixing to give a concentration of 20% by volume. The sediment was removed by centrifugation. The supernatant was measured, an equal volume of acetone added, and the flocculent precipitate formed was removed by centrifugation. The supernatant was again mixed with an equal volume of acetone. A fine precipitate formed which adhered to the walls of the flask. It was collected at room temperature by centrifugation, decantation and evaporation of the remaining acetone. Saline (0.9%) was added dropwise until the precipitate just dissolved. This concentrated solution contained the activity against *A. fecalis*. Nine volumes of saline were then added and 0.1% sodium azide or merthiolate (1:10,000) were used as preservative. Slight turbidity of the solution was removed by centrifugation after treatment with one-fourth its volume of chloroform. The clear supernatant containing the PSH was used for the test.

The test consisted of a macroscopic slide agglutination using one drop of a thick suspension of a 20-30 hours brain heart infusion agar slant culture of the recently isolated organism and one drop of PSH.

Centrifugations were performed for 10 minutes in an International Centrifuge Type SB#E-1495 provided with a 16 inch diameter head at 1,600 rpm.

Results. The agglutinating activity of PSH against different strains of the bacterial species isolated is shown in Table I.

Summary and conclusions. Sixteen strains of *A. fecalis* which varied only in macroscopic growth appearance of colonies, motility and nitrogen gas production in Sellers' medium (5) were all agglutinated by PSH and 11 strains of Pseudomonas gave negative agglutinination reactions. Among the unidentified organisms there were 3 which showed biochemical reactions similar to those of *A. fecalis* but were not agglutinated by PSH. These strains may be atypical non-pigment producing, non-gelatin liquifying strains of

TABLE I. Cultural Characteristics and PSH Agglutinability of Non-Fermenting Gram-Negative Rods.

Organism	No. of strains	Gelatin	Citrate	Pigment	Fluorescence (Sellers)	N_2 agar (Sellers)	Motility (broth)	Agglutination (PSH)
A. fecalis	8	—	+	—	—	+	+	+
	4	—	+	—	—	—	—	+
	4	—	+	—	—	—	+	+
Ps. aeruginosa	5	+	+	+ green	+	+	+	—
	1	+	+	+ lemon yellow	+	+	+	—
	1	+	+	—	+	+	+	—
	1	+	+	+ green	+	—	+	—
	1	—	—	+ green	+	—	+	—
	2	—	+	—	+	—	+	—
Unidentified	3	—	+	—	—	—	—	—
	1	+	+	—	—	—	+	+
	1	—	—	+ brown	—	—	—	—
	1	+	—	—	—	—	+	—
	1	—	—	—	—	—	—	±

Ps. aeruginosa. The possibility of using the agglutinating properties of PSH as a tool in the differentiation of *A. fecalis* from other Gram-negative rods, especially *Ps. aeruginosa*, is being further investigated.

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Hepatic Metabolism and the Anti-Androgenic Activity of Cyproterone Acetate.* (31341)

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Recent reports suggested that cyproterone acetate (Cyp A) might exert anti-androgenic effects directly on receptors within target organs. Junkmann and Neumann(1,2) showed that this compound inhibited fetal endogenous androgens without affecting the secretion of ICSH. These authors and others (3) demonstrated that Cyp A also inhibited the action of exogenous androgens in castrate rats. It is not certain, however, whether Cyp A exerted an anti-androgenic effect by increasing the destruction of androgens in the liver (4,5) or by interfering with the effect of androgens upon target organs. The present study was designed to investigate the first of these possibilities, comparing the systemic effect of this compound when administered subcutaneously with that produced by a splenic depot which drains directly to the liver(6).

Materials and methods. Charles River male rats were castrated at birth. When 9-12

* Cyproterone acetate (1,2α-methylene-6-chloro-$\Delta^6$17α-hydroxyprogesterone acetate) was synthesized by Dr. Wiechert, Schering AG, Berlin, Germany. The authors are indebted to Dr. Karl H. Kimbel of Berlin Laboratories, Inc., for the supply of Cyp A, to Mrs. Maxine Wollman for technical and clerical assistance, and to Gordon E. Mestler for drawing the graph. The present work was supported in part by the Harris McLaughlin Foundation and an unrestricted research grant to this medical school from USPHS.