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Enumerating Antibiotic Susceptibility Patterns of *Pseudomonas aeruginosa* Isolated from Different Sources in Dhaka City

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Microscopic Observation of *Pseudomonas aeruginosa*

All the isolates were Gram-negative, short rod shaped which are similar to *Pseudomonas* spp.

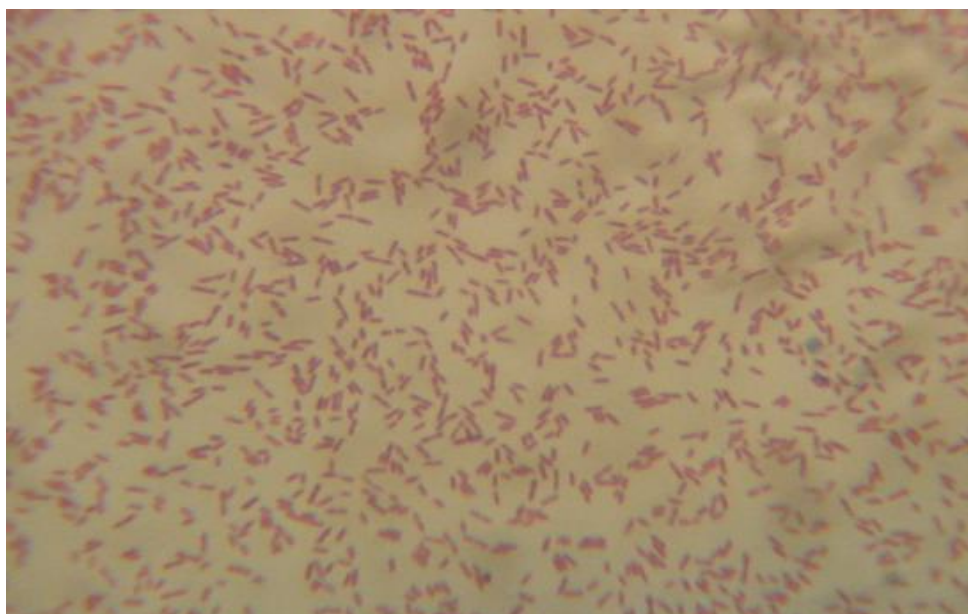


Fig. (1). Gram-staining of the of *Pseudomonas* isolate.

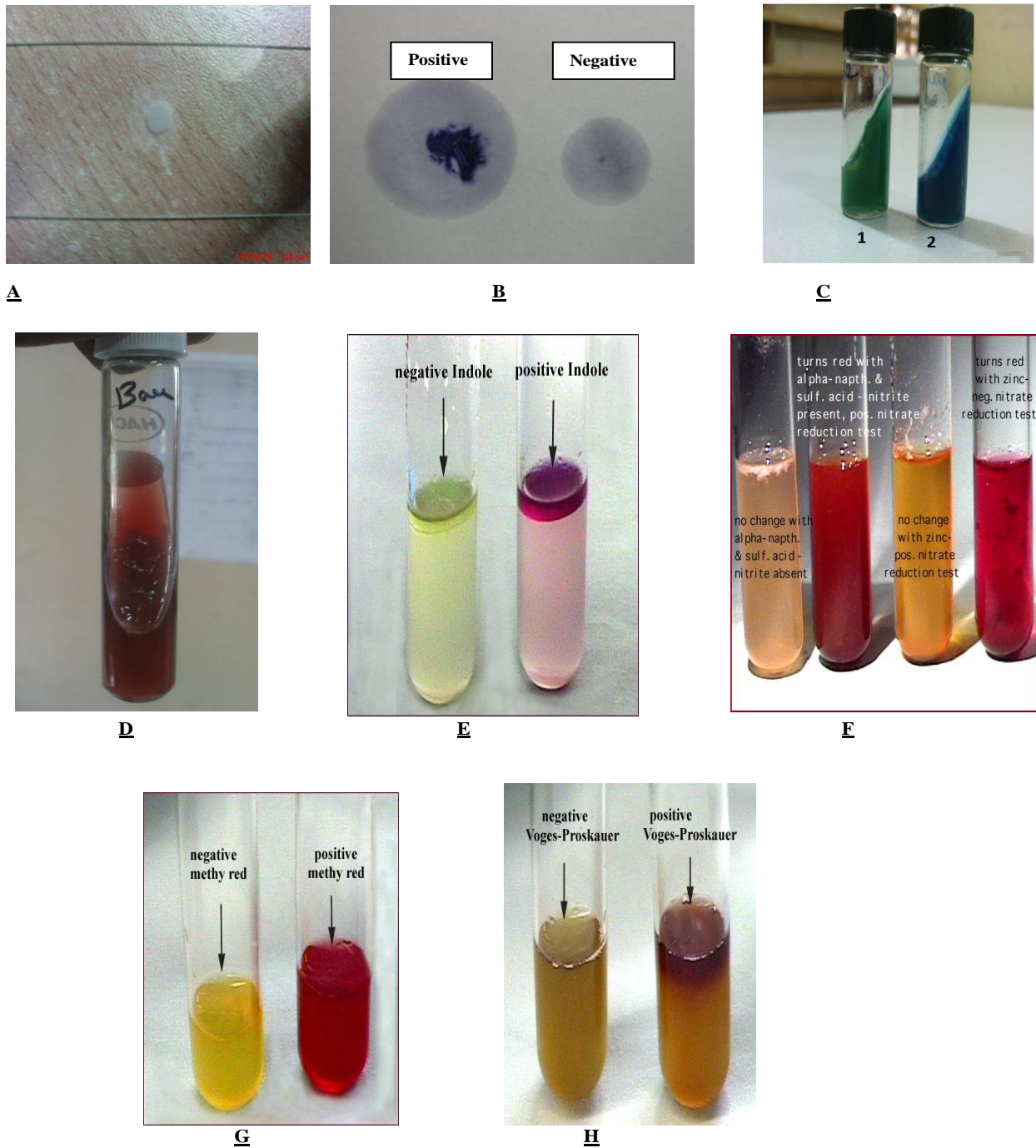


Fig. (2). Biochemical reaction test (A) Catalase test, (B) Oxidase test, (C) Citrate utilization test (1, negative; 2, positive), (D) TSI test (1, Alkaline; 2, alkaline), (E) Indole test, (F) Nitrate reduction test, (G) MR test, (H) VP test.

Biochemical Identification of *Pseudomonas aeruginosa*

Extensive biochemical tests were performed to determine the biochemical behaviour of the isolates. The results are shown in the Tables (1, 2 and 3).

Table 1. Biochemical characteristics of *P. aeruginosa* (Environmental Isolates).

| Strain ID | Oxidase | Catalase | Citrate Utilization | TSI | | | MIU | | | MR-VP | | Nitrate Reduction | Gelatin Liquefaction | Fluorescence activity | Hemolytic activity | Growth at 42°C |
|-----------|---------|----------|---------------------|-------|------|------------------|-----|---|---|-------|----|-------------------|----------------------|-----------------------|--------------------|----------------|
| | | | | Slant | Butt | H ₂ S | M | I | U | MR | VP | | | | | |
| TW | + | + | + | K | K | - | + | + | - | - | + | + | + | β | + | |
| PS1 | + | + | + | K | K | - | + | + | - | - | + | + | + | β | + | |

(Table 1) contd....

| Strain ID | Oxidase | Catalase | Citrate Utilization | TSI | | | MIU | | | MR-VP | | Nitrate Reduction | Gelatin Liquefaction | Fluorescence activity | Hemolytic activity | Growth at 42°C |
|-----------|---------|----------|---------------------|-------|------|------------------|-----|---|---|-------|----|-------------------|----------------------|-----------------------|--------------------|----------------|
| | | | | Slant | Butt | H ₂ S | M | I | U | MR | VP | | | | | |
| PS2 | + | + | + | K | K | - | + | - | + | - | - | + | + | + | β | + |
| GW | + | + | + | K | K | - | + | - | + | - | - | + | + | + | β | + |
| SW | + | + | + | K | K | - | + | - | + | - | - | + | + | + | β | + |
| PO | + | + | + | K | K | - | + | - | + | - | - | + | + | + | β | + |
| BRW | + | + | + | K | K | - | + | - | + | - | - | + | + | + | β | + |
| DLW | + | + | + | K | K | - | + | - | + | - | - | + | + | + | β | + |
| MW1 | + | + | + | K | K | - | + | - | + | - | - | + | + | + | β | + |
| MW2 | + | + | + | K | K | - | + | - | + | - | - | + | + | + | β | + |

Table 2. Biochemical characteristics of *P. aeruginosa* (Clinical Isolates).

| Strain ID | Oxidase | Catalase | Citrate Utilization | TSI | | | MIU | | | MR-VP | | Nitrate Reduction | Gelatin Liquefaction | Fluorescence activity | Hemolytic activity | Growth at 42°C |
|-----------|---------|----------|---------------------|-------|------|------------------|-----|---|---|-------|----|-------------------|----------------------|-----------------------|--------------------|----------------|
| | | | | Slant | Butt | H ₂ S | M | I | U | MR | VP | | | | | |
| WS | + | + | + | K | K | - | + | - | + | - | - | + | + | + | β | + |
| PUS | + | + | + | K | K | - | + | - | + | - | - | + | + | + | β | + |
| SUR.PUS | + | + | + | K | K | - | + | - | + | - | - | + | + | + | β | + |
| BAN | + | + | + | K | K | - | + | - | + | - | - | + | + | + | β | + |

Table 3. Biochemical characteristics of *P.aeruginosa* (Food Isolates).

| Strain ID | Oxidase | Catalase | Citrate Utilization | TSI | | | MIU | | | MR-VP | | Nitrate Reduction | Gelatin Liquefaction | Fluorescence activity | Hemolytic activity | Growth at 42°C |
|-----------|---------|----------|---------------------|-------|------|------------------|-----|---|---|-------|----|-------------------|----------------------|-----------------------|--------------------|----------------|
| | | | | Slant | Butt | H ₂ S | M | I | U | MR | VP | | | | | |
| CN1 | + | + | + | K | K | - | + | - | + | - | - | + | + | | β | |
| CN2 | + | + | + | K | K | - | + | - | + | - | - | + | + | | β | |
| FM | + | + | + | K | K | - | + | - | + | - | - | + | + | | β | |

Symbols: K: Alkaline reaction, '+': Positive, '-': Negative, β: Beta

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