

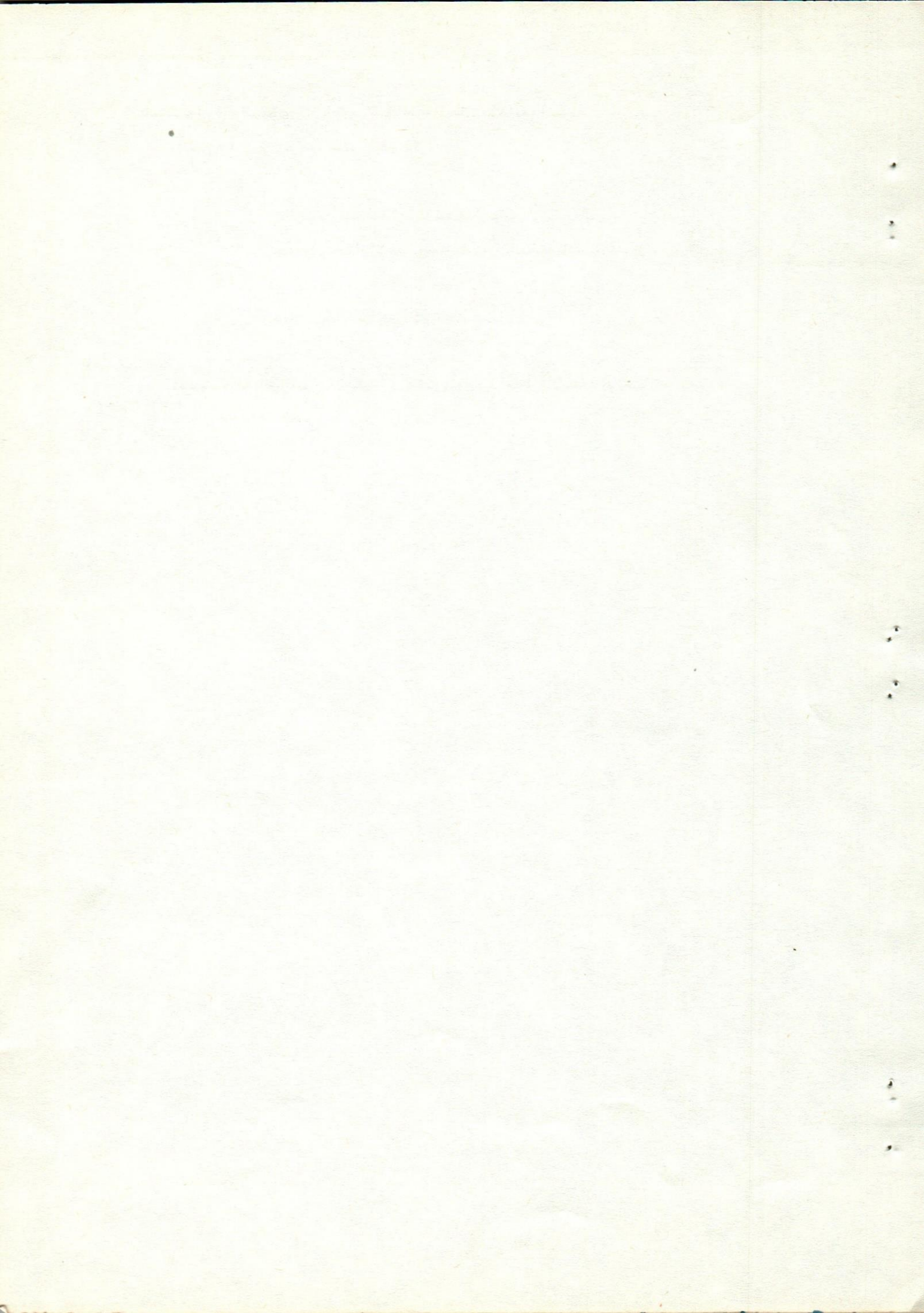
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الخواص الكيميائية كوسيلة لتشخيص ميكروب (الكستريد يوم  
برفرنجنزاً) باستخدام الاختبارات المتعددة والسابقة للتجهيزات

طه العلاوى ، بتروفيتش سها

تم دراسة الخواص الكيميائية لميكروب ( الكستريد يوم برفرنجنزاً ) باستخدام اختبارات متعددة  
ومجهزة ( Api 20 A ) .



## BIOCHEMICAL PROPERTIES AS AN AID FOR THE DIAGNOSIS OF CLOSTRIDIUM PERFERINGENS (A) BY USING MULTITEST KITS.\*

(With One Table)

By

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### SUMMARY

Biochemical properties of *Cl. perferingens* (A) strains were studied by using multitest kits (Apl 20 A system).

Thioglycollate media was used as fluid media, incubation for 48 H and 37°C were sufficient for studying the biochemical properties of *Cl. perferingens*.

### INTRODUCTION

*Cl. perferingens* was conclusively established as an etiological agent of many infectious diseases and food poisoning (HOBBS *et al.*, 1953). In acute anaerobic infections early diagnosis and treatment is essential and requires the use of sensitive and reliable culture techniques (MACVAY *et al.*, 1952).

Mcmin and Crawford (1970) reported that the combined use of thioglycollate and a gas pak jar are essential for recovery of anaerobes from clinical specimens. However, as Clostridial *perferingens* are considered very important etiological cause of many infectious diseases in the field of veterinary practice, there fore there is a need for simple, practical technique for diagnosing these micro-organisms from clinical specimens. Therefore, the present study was designed to investigate the biochemical properties of *Cl. perferingens* as an aid for their rapid diagnosis by using the multitest kits.

### MATERIAL and METHODS

#### a- Strains used:

Five strains namely: 5A, 18A, 19A, 22A and 360A. These strains were supplied from Cultures Storage of Institute of Animal Medicine and Hygiene, Hohenheim University.

#### b- Multitest kits (Apl 20 A system):

Apl 20 A strips for anaerobic bacteria were used, each strip contained 20 biochemical tests. These are: indole, urease, glucose, mannite, lactose, sucrose, maltose, salicin, xylose, arabinose, gelatin, esculin(H2S), glycine, cellobiose, mannose, melexitose, raffinose, sorbitol, rhaminose and trehalose.

#### c- Fluid media:

Thioglycollate media USP (BBL, 11260).

#### d- Solid media:

Blood agar base no: 2 (oxid CH 271) with 5% sheep blood. These tubes of fluid media (10 ml/tube) were heated up to 80 C° in water bath just before use for the purpose of reduction, the tubes were then inoculated after it was cooled to room temperature. All media and biochemical strips were incubated in anaerobic glove box (National Heinicke Company, USA, Aodel 3650) at 37 C° for 48H. For each strain 6 strips were used. Fluid media were inoculated with the used strains for the preparation of the inoculum, then incubated for 24H.

### RESULTS and DISCUSSION

From the table, it is obvious that *cl. perferingens* type (A) were in 100% negative for indole, salicin,

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xylose, arabinose, asculin, cellobiose, malezitose, raffinose, sorbit, rhaminose, trehalose, catalase, while in case of lactose, succrose and maltose were also 100-ve except in strains 5A, 18A and 22A in which the biochemical changes were ranged from 50 to 100-ve for lactose and succrose. In case of maltose, a frequent changes ranged from (50-100%-ve) were observed.

While the strains were in 100% positive in case of glucose, gelatin, lycine and mannose.

These results are nearly similar to those reported by LOTHER *et al.* (1974) for *Cl. perferingens*. However, lack of literatures concerning type (A) of *clostridium perferingens* by using multitest kits licks too much to compare our results.

In a similar study on *Cl. tetani* strains by EL-ALLAWY and SAHA (1980) and from the results of the present study on *Cl. perferingens*, One can say that multitest kits are considered a useful clinical and research tool to aid in diagnosis of infection to investigate the involvement of anaerobic micro-organisms in many disease processes and aid to facilitate improved approach to their treatment and control.

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Results of biochemical tests for *cl. perferingens* type (A) by multitest kits

Strains Biochemical tests	5 A	18 A	19 A	22 A	360 A
Indole	100-	100-	100-	100-	100-
Urease	100-	100-	100-	100-	100-
Glucose	100+	100+	100+	100+	100+
Mannite	100-	100-	100-	100-	100-
Lactose	83.3-	83.3-	100-	100-	100-
Succrose	83.3-	100-	100-	66.3-	100-
Maltose	50-	83.3-	100-	100-	100-
Salicin	100-	100-	100-	100-	100-
Xylose	100-	100-	100-	100-	100-
Arabinose	100-	100-	100-	100-	100-
Gelatin	100+	100+	100+	100+	100+
Asculin (H2S)	100-	100-	100-	100-	100-
Glycine	100+	100+	100+	100+	100+
Cellobiose	100-	100-	100-	100-	100-
Mannose	50+	100+	100+	100+	100+
Malezitose	100-	100-	100-	100-	100-
Raffinose	100-	100-	100-	100-	100-
Sorbit	100-	100-	100-	100-	100-
Rhaminose	100-	100-	100-	100-	100-
Trenalose	100-	100-	100-	100-	100-
Catalase	100-	100-	100-	100-	100-