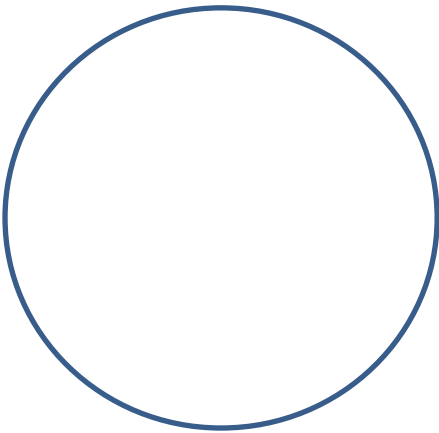


Practical 4: Acid Fast Staining

1. Stain heat-fixed smear of *M. tuberculosis* by Ziehl-Neelsen.



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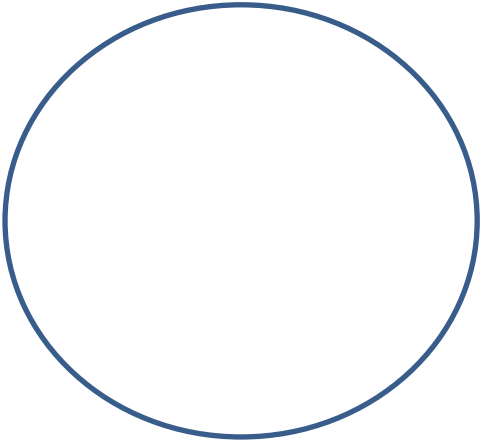
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2. Fluorescent microscopy - principle.

d/ Demonstration - bacterial colonies cultured on blood agar:

bacteria	surface of colony	size	color	shape	hemolysis
<i>Moraxella catarrhalis</i>					
<i>Klebsiella pneumoniae</i>					
<i>Bacillus cereus</i>					
<i>Escherichia coli</i>					
<i>Pseudomonas aeruginosa</i>					

e/ *Candida albicans* – growth on Sabouraud agar.



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3. Inoculation of infectious material :

Liquid medium in the tube:

Solid medium in the Petri dish:

Practical 8: Testing of Biochemical Properties of Bacteria(Part I)

1. Demonstration of bacterial biochemical properties testing on Endo agar, Deoxycholate-citrate agar (DCA) and Mannitol salt agar (MSA).

Proteus vulgaris, Proteus mirabilis,

Salmonella typhi, Shigella dysenteriae, Escherichia coli, Klebsiella pneumoniae,

Staphylococcus aureus, Staphylococcus epidermidis.

Endo agar:

DCA:

MSA:

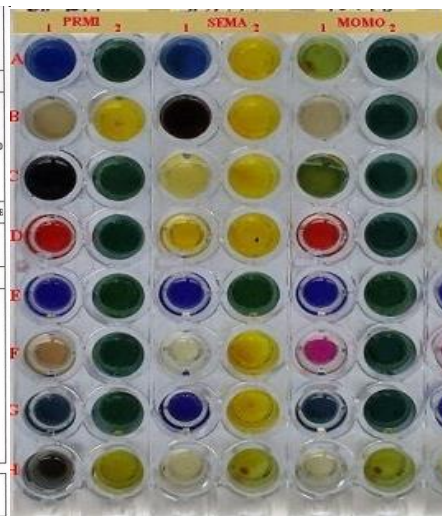
Endo agar	<i>Sh. dysenteriae</i>	<i>S. typhi</i>	<i>E.coli</i>	<i>P. vulgaris</i>	<i>P.mirabilis</i>	<i>K.pneumoniae</i>
Lactose fermentation						
colour						
DCA	<i>Sh. dysenteriae</i>	<i>S. typhi</i>	<i>E.coli</i>	<i>P. vulgaris</i>	<i>P.mirabilis</i>	<i>K.pneumoniae</i>
Lactose fermentation						
H ₂ S						
MSA	S. aureus		S. epidermidis			
Mannitol fermentation						
Colour						

2. *Helicobacter pylori* - biochemical properties.

3. Triple Sugar Iron Agar (Hajn's Agar): composition, use, demonstration

4. úpravy Mikro-La-Test.

Slopec/ Column	Zkratka Code	Reakce Reaction		Poznámka Note
		Positivní Positive	Negativní Negative	
Řádek 1 - Row 1				
H	H ₂ S	●	○	Parafin olej, 2 kapky Paraffin oil, 2 drops
G	LYS	●	●	..
F	IND	●	●	.. *číslo pro: *reagent for: IND
E	ORN	●	●	..
D	URE	●	●	..
C	PHE	●	●	*číslo pro: *reagent for: PHE
B	ESL	●	●	
A	SCI	●	●	
Řádek 2 - Row 2				
H	MAL	●	●	
G	INO	●	●	
F	ADO	●	●	
E	CEL	●	●	
D	SUC	●	●	
C	SOR	●	●	
B	TRE	●	●	
A	MAN	●	●	
OXI test	OXI	●	○	
ONP test	ONP	●	○	



MIKRO-LA-TEST®		Datum/Dátum/Date/Дата		Zprac./Sprac./Ref./Изгот./проект		PLIVA - Lachema a.s. Karáček 1 621 33 Brno CZECH REPUBLIC																											
Kmen č./Kmeň č./Strain No./Но. анализа				Poznámky/Notes/Отмети																													
Produkt Průžek Strip Полоска		ENTEROTest 16 Řádek/Rádek/Strip/Строчка 1																Řádek/Rádek/Strip/Строчка 2															
OXI	ONP	H	G	F	E	D	C	B	A	H	G	F	E	D	C	B	A																
1	2	H ₂ S	LYS	IND	ORN	URE	PHE	ESL	SCI	MAL	INO	ADO	CEL	SUC	SOR	TRE	MAN																
		+	-	+	-	+	-	+	+	-	+	+	-	+	+	+	+																
		5			2			6			6			3																			
Profil/Profile/Профиль																																	
Dodatečné testy/Additional tests/Дополнительные тесты																																	
Identifikace/Identifikácia/Identification/Идентификация SERRATIA MARCESCENS																																	

Practical 9: Testing of Biochemical Properties of Bacteria (Part II)

Bacterial Enzymes and Toxins

1. Catalase test:

Staphylococcus aureus

Streptococcus pyogenes

2. Oxidase test :

Oxidase Activity	
<i>Moraxella catarrhalis</i>	
<i>Pseudomonas aeruginosa</i>	

1. Coagulase test :

	<i>S. epidermidis</i>	<i>S. aureus</i>	Procedure
Bound coagulase (clumping factor)			
Free coagulase			

2. Proteolytic properties testing:

Tube Method:

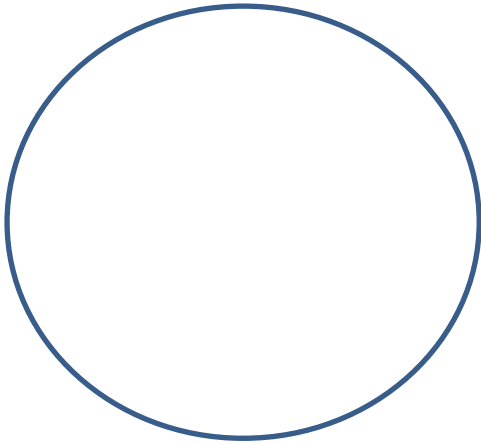
Dish Method (Clark):

Gelatin disks hydrolysis (Kohn):

Bacteria	Proteolytic properties
<i>Pseudomonas aeruginosa</i>	
<i>Escherichia coli</i>	

3. Detection of toxin production (*Corynebacterium diphtheriae*):

a/ in vitro (Elek's test)



b/ in vivo – principle

5. Detection of tetanospasmin (*Clostridium tetani*) – animal model

Practical 10: Anaerobic Bacteria – cultivation, microscopy

1. Cultivation media for anaerobes:

2. Sampling and transport of infectious material for anaerobic cultivation:

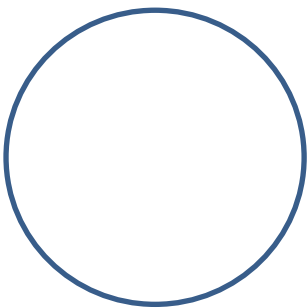
3. Methods of anaerobic cultivation:

a. Biological

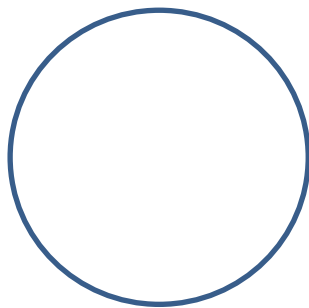
b. physical

c. chemical

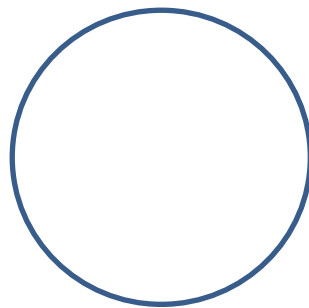
4. Examples of anaerobic bacteria – microscopy (Gram stain).



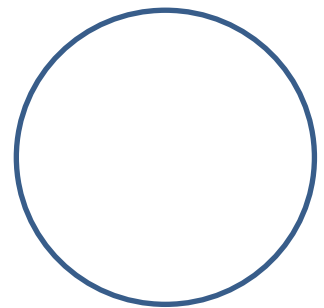
*Propionibacterium
acnes*



Clostridium difficile



Clostridium perfringens



Peptostreptococcus sp.

Practical 11: Antibiotic Susceptibility Testing

1. Disc Diffusion Test (DDT):

2. E – test:

3. Minimum Inhibitory Concentration (MIC):