

## 2-1--Materials:

### 2-1-1Nutrient media:-

Nutrient media	The manufacture company and structure	Abbreviation	Purpose of use
1-Blood Agar Base (g/L)	(Oxide)	BA	Isolation and diagnosis of positive bacteria and negative for gram
'Lab-Lemco' powder	10.0		
Peptone	10.0		
Sodium chloride	5.0		
Agar	15.0		
pH	7.3 ± 0.2		
2- Cysteine –Lactose –Electrolyte Deficient Agar (g/L)	(Oxide)	CLED	The media is not picked and differentiated to isolate the microbes and count species that may be caused by urinary tract infections
Tryptone	10.0		
Beef extract	3.0		

Peptone	4.0		
Lactose	10.0		
Cystine	0.128		
Bromo Thymol Blue	0.02		
Andrade Indicator	0.1		
Agar	15.0		
pH	7.5 ± 0.2		
3-MacConkey Agar (g/L)	(Oxide)	MC	Use as a retreat in a negative bacterial and disperse between fermented and non-fermented bacteria for lactose
Peptone	20.0		
Lactose	10.0		
Bile salts	5.0		
Sodium chloride	5.0		
Neutral red	0.075		
Agar	12.0		
pH	7.4 -0.		

4-Muller Hinton Agar (g/L)	(Oxide)	MH	Sensitivity test
Beef, infusion from	300.0		
Casein hydrolysate	17.5		
Starch	1.5		
Agar	17.0		
pH	7.4 -0.2		
5-Nutrient Agar (g/L)	(Oxide)	NA	The general development of
Lab-Lemco' powder	1.0		
'Yeast extract	2.0		
Peptone	5.0		
Sodium chloride	5.0		
Agar	15.0		
Ph	7.4 -0.2		
6-Nutrient Broth No1 (g/L)	(Biochemika Fluka)	NB	Media to learn some types of oxygen bacteria located in the nitrit, erotica
Peptone	15		
Yeast extract	3		

Sodium chloride	6		
(D+)-Glucose	1		
Final PH	7.5		
7- Triple sugar iron Ager (g/l)	(Liofilchem)	T.S.I.Agar	Used to differentiate between fermented bacteria for different types of sugars and rhythmic detection of hydrogen sulfids
Peptospecial	20.0		
Sucrose	10.0		
Lactose	10.0		
Sodium chloride	5.0		
Beef Extract	3.0		
Yeast Extract	3.0		
Glucose	1.0		
Ferrous Sulphate	0.2		
Sodium Thiosulphate	0.3		
Phenol Red	0.0025		
Agar	12.0		
Final PH	7.3		

8-Sodium citrate minimum mineral medium (g\l)	( Liofilchem )	SIMMONS CITRATE AGAR	Use the detection of fermented bacteria of jackets as a lonely source of carbon
Magnesium Sulfate	0.2		
Ammonium Dhydrogen phosphate	1.0		
Dipotassium phosphate	1.0		
Sodium citrate	2.0		
Sodium chloride	5.0		
Brom Thymol Blue	0.8		
Agar	15.0		
Final ph	6.9		
9- Salmonella shigella Agar (g\l)	(Oxoid)	S.S.Agar	The media of my choice and differentiation for Salmonella and Shigella bacteria for the rest of the intestinal bacteria
Lab-Lemco powder	5.0		
Peptone	5.0		

Lactose	10.0		
Bile salts	8.5		
Sodium citrate	10.0		
Sodium thiosulphate	8.5		
Ferric citrate	1.0		
Brilliant green	0.00033		
Neutral red	0.025		
Agar	15.0		
Final pH	7.0		
10-Endo Agar (g/l)	(SIGMA)	ENDO	Is used for the microbiological examination of potable water ,waste water ,dairy products and food
Peptic Digest of Animal Tissue	10.0		
Lactose	10.0		
Dipotassium Phosphate	3.5		
Sodium Sulphite	2.5		
Basic Fuchsin	0.5		

Agar	15.0		
Final ph	7.5		
<b>11-MacCoNKEY</b> Agar (NO3)	( oxid)	MC	Use as a retreat in a negative bacterial and disperse between fermented and non-fermented bacteria for lactose
Peptone	20		
Lactose	10		
Bile salts No3	1.5		
Sodium chloride	5.0		
Neutral red	0.03		
Crystal violet	2.00		
Agar	15		
pH	7.1		
<b>12- Methyl red voges</b> proskeur medium	(oxid)	M.R.V.P.medium	Detection of full or partial analysis of sugars and the production of a Cetone
Peptone	7.0		
Glucose	5.0		
Phosphate Buffer	5.0		

Ph	6.9		
13-Buffer Peptone Water	(oxid)	BPW Standard	Investigation of bacteria effective to produce a turnover of amino acids tryptophan
Peptone	10.0		
Sodium chloride	5.0		
Potassium dihydrogen phosphate	1.5		
Di.sodium3.5 phosphate	3.5		
14-NITRATE Broth	(HIMEDIA)	NB	Media to learn some types of oxygen bacteria located in the nitrit, erotica
Peptic digest of animal tissue	5.00		
Beef exteact	3.00		
Potassium nitrate	1.00		
FinalpH	7.0		

<b>15-UREA</b> BROTH BASE	(OXOID)	Christensen's urea	Use the media to disperse on bacteria to produce the urease enzyme
Peptone	1.0		
Glucose	1.0		
Di.sodium hydroge phosphate	1.2		
Potassium dihydrogen phosphate	0.80		
Sodium chloride	5.0		
Phenol red	0.004		
pH	6.8		
<b>16-Eosin</b> Methylene blue lactose sucrose Agar (g/l)	(OXOID)	EMB	Is selective for gram-negative bacteria against gram – positive ,addition is useful in isolation and differentiation of the various gram –negative bacilli and enteric bacilli
Peptic Digest of Animal Tissue	10.0		

Dipotassium Phosphate	2.00		
Lactose	5.00		
Sucrose	5.00		
Eosin -Y	0.40		
Methylene Blue	0.065		
Agar	13.15		
PH	7.2-0.2		

2-1-3The use solutions and detectors:-

The number	Solution or detector	Purpose of use	Ingredients
1	Gram Stain Solution	For the purpose of dyes and distinguish between bacterial cells	Crystal violet – Ethanol— Safranin— Iodine .
2	Methyl red Reagent	To investigate organic acids as a results of glucose sugar turning bacteria	Methyl red – Ethyl alcohol— Sterile deionized water.
3	Voges Reagent	Know the potential of bacteria for product acetone	Methyl red ---alpha naphthol solution –KOH solution
4	Oxidase Reagent	For bacterial diagnosis	Prepared discs
5	Nitrate Reagent	To investigate the presence of types of oxygen bacteria in nitrates as a virtual hydrogen	Nitrate A:Sulfanilic acid –Acetic acid Nitrate B:N,N-Dimethyl-1-naphthyl amine –Acetic acid— Zinc powder
6	Kovacs Reagent	Detect the article in the consultant	P-dimethyl amino benzaldehyde – -Amyl alcohol---Hydrochloric acid concentrated

## 2-1-6-Apparatus and Equipment

TableHardware and laboratory tools used in the study:

The number	The name of the device	The manufacture company	used	
1	Autoclave	Marubeni	Is used to sterilize medical equipment's and lab equipment by destroying potentially infectious agents	
2	Hood	Japan	Are designed to remove odors ,smoke ,grease and other pollutants that are eleased into the air while cooking	
3	Sensitive electronic balance	Metter (Germany)	To measure small quantities of chemicals ,compounds ,and reagents .	
4	Incubator	Memmert	Is a device used to grow and maintain microbiological cultures or cell cultures.	
5	Oven	Germany	Are essential in the process of baking ,curing ,or drying various substances.  Used to sterilize.	
6	UV-Transilluminater	Scie –plas (Belgium)	Offers the researcher uniform and intense sources of ultraviolet light (radiation) in a compact package.	
7	Refrigerator	Concord (Lebanon)	Is a specialized cooling unit designed for storing temperature –sensitive materials ,such as biological samples, chemicals ,and reagents ,in research ,medical ,and scientific laboratories.	
8	Disposable petri dishes	Sun (china)	Used to culture cells by providing storage space and preventing them from getting contaminated.	

9	Compound Light Microscope	Olympus (Japan)		
10	Test tube	Super estar(India)	Used to hold ,mix ,and heat chemical experiments .	
11	Size different flask	china	Put medium	
12	Vortex	FAWEM(Brazil)	Mix medium	
13	Micropipettes	Labacco (Germany)	Used to measure small amounts of liquids with a volume range between 1 and 1000micro.	
14	Slides	china	Samples need microscope	
15	Bunsen flame	china	Used in various science experiments due to their ability to produce a hot ,non-luminous flame that is free of soot .	
16	Bath Water	Jullabo (Germany)	Used to keep water at a constant temperature for incubating samples in a laboratory	
17	Heating device with magnetic engine	Gallen kamp(England)	Mix materilas	

#### 2-1-7-Other materials:-

Table :Used materials in study :-

The number	The tool	The manufacture company		
1	Petri dishes	Biozek(swizerland)	Use to hold growth medium in which cells can be cultured. A support or structural platform for placing ,growing or testing biological specimens.	
2	Eppendorf tubes	Geneaid(Korea)	For preparing ,mixing ,centrifuging ,transporting and storing solid and liquid samples and reagents .	
3	Beakers ,flasks	china	Used for mixing measuring and heating chemicals ,samples and solutions. Used to hold liquid or solid samples or as a container for reactions.	

4	Cotton swabs	AFCO(Jordan)	Transport samples	
5	loop	HI media(India)	Dish planning	