Bacteria / test	Colony Morphology	Gram Stain	Catalase	OF Test	Furazolidone Susceptibility Test	Bacitracin Susceptibility Test	Coagulase Test	DNase Test	Growth on mannitol salt agar	Novobiocin Susceptibility Test
Micrococcus	circular, smooth, entire, convex and usually pigmented in shades of yellow or red	+ tetrads or eight cocci	+	Oxidizer	Resistant	Sensitive				
Staphylococcus aureus	yellow, round, large (1-3 mm), convex, and opaque colonies	+ irregular clusters	+	Fermenter	Sensitive	Resistant	+	+	+	
Staphylococcus epidermidis	white, raised, cohesive colonies about 1–2 mm	Single cocci, pairs, tetrads, and chains in liquid cultures	+	Fermenter	Sensitive	Resistant	-	-	-	Sensitive
Staphylococcus saprophyticus	Colonies are raised, circular, opaque and gray to white or faintly yellow on agar.		+	Fermenter	Sensitive	Resistant	-	-	-	Resistant

جدول1- میکروکوکاسیه

Bacteria / test	Colony Morphology	Gram Stain	Catalase	Bacitracin (toxo A) Susceptibility Test	SXT Susceptibility Test	CAMP Test	Optochin Susceptibility Test	Bile Solubility Test	Bile-Esculin test	6.5% Salt Tolerance Test
Streptococcus pyogenes (group A streptococci)	Pin point Large colonies (>0.5 mm) with β- hemolysis that is often two to four times as large as the colony diameter	+ grouped in pairs, short to long chains	-	Sensitive	Resistant	-			-	
Streptococcus agalactiae (group B streptococci)	glistening gray-white colonies with a narrow zone of β-hemolysis	+ grouped in pairs, short to long chains	-	Resistant	Resistant	+			-	
Streptococcus pneumoniae	small, grey, moist (sometimes mucoid) colonies and produce a zone of α-hemolysis	+	-	Resistant	Sensitive	-	Sensitive	Sensitive	-	
Streptococcus viridans	α-hemolysis	+	-	Resistant	Sensitive	-	Resistant	Resistant	-	
Enterococcus (group D streptococci)	α/ β/ γ hemolysis	+	-	Resistant	Sensitive	-			+	+
Non-Enterococcus (group D)	γ-hemolysis	+	-	Resistant	Sensitive	-			+	-

جدول2- استرپتوکوکاسیه

Bacteria / test	Colony Morphology	Gram Stain	Oxidase	Glucose fermentation	Maltose fermentation	Sucrose fermentation	Lactose fermentation	DNase Test
Neisseria gonorrhoeae	Non-hemolytic thin, round, translucent, convex or slightly umbonate colonies with finely granular surface and lobate margins	- diplococci	+	+	-	-	-	-
Neisseria meningitidis	Non-hemolytic grey and unpigmented colonies which appear round, smooth, moist, glistening, and convex, with a clearly defined edge	- diplococci	+	+	+	-	-	-
Neisseria sicca	Non-hemolytic colonies are large, ≤ 3 mm, smooth, with entire edges and can form dry, wrinkled, and grayish white, although some strains may produce a yellow pigment	- diplococci	+	+	+	+	-	-
Neisseria lactamica	Non-hemolytic	- diplococci	+	+	+	-	+	-
Moraxella catarrhalis	Non-hemolytic Colonies are 1-3 mm after 24 hours, gray to white, opaque, and smooth	- diplococci	+	-	-	-	-	+

جدول3- نایسریاسه

Bacteria / test	Colony Morphology	Gram Stain	Oxidase	Catalase	SIM (Motility)	Bile-Esculin test	CAMP Test	Microscopy
Listeria monocytogenes	narrow zones of β-hemolysis that frequently do not extend much beyond the edge of the colonies	+ Rod	-	+	+: umbrella form in room temperature after 48h -: in 37 °C	+	+	China's Letter, Parallel, XYZ

Bacteria / test	Gram Stain	Catalase	Microscopy
Diphtheroid	-	+	China's Letter, Parallel, XYZ

جدول4- لیستریا و دیفتروئید

Bacteria / test	Colony Morphology	Gram Stain	KIA	Urease	Oxidase	SIM (H_2S)	SIM (Indole)	SIM (Motility)	OF Test	Citrate
Pseudomonas aeruginosa	3 colony types: 1) small, rough, wrinkled 2) large, flat and spreading, serrated edge and a metallic sheen (associated with autolysis of the colony) 3) mucoid, sphere, smooth surface Often they are ß-hemolytic.	- Rod	Alk/Alk	-	+	-	-	+	Oxidizer	+
Alcaligenes faecalis	Colonies are whitish with a feathery, thin flared irregular edges. or colonies appear non-pigmented and similar in size to *Acinetobacter*.	- Rod	Alk/Alk	-	+	-	-	+	Asaccharolytic (inert)	+
Chryseobacterium meningosepticum	Colonies are smooth, shiny and quite large (1-2 mm after 24 hours) produce no or weak yellow or light salmon-colored pigment after 2-3 days	- Rod	Alk/Alk	-	+	-	+	-	Oxidizer	-
Moraxella lacunata		- Rod	Alk/Alk	-	+	-	-	-	asaccharolytic	-

Bacteria / test	Colony Morphology	Gram Stain	KIA	Urease	Oxidase	SIM (H_2S)	SIM (Indole)	SIM (Motility)	OF Test	Citrate
Burkholderia cepacia	**c**olonies are smooth and slightly raised; occasionally isolates are mucoid Many *B. cepacia* strains (78%) produce a yellow pigment and a small percentage (9%) are α- or β-hemolytic or form a brown pigment (4%)	- Rod	Alk/Alk	-	-	-	-	+	Oxidizer	+
Acinetobacter baumannii	colonies are gray to white, smooth and opaque, non-hemolytic, 1-2 mm, center growth thicker and do not constitute pigment	- Rod	Alk/Alk	-	-	-	-	-	Oxidizer	V (+)
Acinetobacter lwoffii		- Rod	Alk/Alk	-	-	-	-	-	asaccharolytic	V (-)
Shewanella putrefaciens	Convex, smooth and sometimes mucoid colonies with yellow / brown - brown pigment and give a green discoloration of the blood agar	- Rod	Alk/Alk H_2S +	-	+	+	-	+	Oxidizer	-

جدول5- NFBها

Bacteria / test	Oxidase	TSI	Urease	SIM (H2S)	SIM (Indol)	SIM (Motility)	MR	VP	Citrate	LDC	Sodium Acetate	ODC	Sodium Malonate	ONPG
Escherichia coli (E. coli)	-	A/A	-	-	+	+	+	-	-					+
EHEC	-	Alk/A	-	-	V(+)	V(+)	+	-	-	+	+			+
EIEC	-	Alk/A	-	-	V(+)	V	+	-	-	+	+			+
Shigella	-	Alk/A	-	-	-	-	+	-	-	-	-			-
Klebsiella	-	A/A	-	-	-	-	-	+	+			-		+
Klebsiella pneumoniae	-	A/A	Weakly +	-	-	-	-	+	+			-		+
Klebsiella oxytoca	-	A/A	-	-	+	-	-	+	+			-		+
Enterobacter	-	A/A	-	-	-	+	-	+	+			+		+
Serratia *	-	A/A	-	-	-	+	-	+	+			+		+
Proteus mirabilis	-	Alk/A	+	+	-	+	+	-	V(+)			+		-
Proteus vulgaris *	-	A/A	+	+	+	+	+	-	V(-)			-		-
Providencia rettgeri	-	Alk/A	+	-	+	+	+	-	V(+)			-		-
Morganella morganii	-	Alk/A	+	-	+	+	+	-	V(-)			+		-
Salmonella typhi (Group D Salmonella)	-	**Alk/A (H2S+light)**	-	+	-	+	+	-	V(-)	+			-	-
Salmonella paratyphi-Group A	-	Alk/A	-	-	-	+	+	-	V(-)	-			-	-
Salmonella paratyphi-Group B, others(C,G)	-	**Alk/A (H2S+heavy)**	-	+	-	+	+	-	V(+)	+			-	-
Arizona	-	A/A	-	+	-	+	+	-	V(+)	+			+	-
Edwardsiella	-	Alk/A	-	+	+	+	+	-	V	+				-
Citrobacter freundii	-	A/A	-	+	-	+	+	-	+	-				+
Citrobacter diversus	-	Alk/A	-	-	+	+	+	-	+	-				+

جدول6- انتروباکتریاسه

*تمامی باکتری‌های نام برده شده در این بخش (انتروباکتریاسه‌ها)، Facultative Anaerobe می‌باشند.

Bacteria / test	Colony Morphology	Gram Stain	توضيحات
Escherichia coli (E. coli)	Colonies may be smooth (S-type), low convex, moist and gray with a shiny surface, entire edge. R-type or mucoid forms may occur. Some strains are β-hemolytic.	**- / rod**	**Anti-serum typing**
EHEC		**- / rod**	
EIEC		**- / rod**	
Shigella	Colonies are large, gray and smooth	**- / rod**	**Anti-serum typing**
Klebsiella		**- / rod**	
Klebsiella pneumoniae	Colonies are often large, shiny and slimy.	**- / rod**	
Klebsiella oxytoca	Colonies are often large, shiny and slimy.	**- / rod**	
Enterobacter	Colonies are large 2-3 mm, gray, smooth, shiny and sometimes flat with irregular edges, they can also be mucoid (strains with K-antigen have a capsule). They are nonpigmented.	**- / straight rod**	
Serratia marcescens	Colonies are 1-3 mm, circular, shiny, opaque, creamwhite and smooth with an entire margin. Some strains have a capsule. Red Pigment	**- / straight coccoid rod**	**Dnase+**
Proteus mirabilis	These bacteria usually swarms. **Swarming:** Can be seen as a thin, transparent colorless and sometimes almost invisible layer. It spreads from the colony in waves.	**- / rod**	**PD+**
Proteus vulgaris *	Colonies are grey to tan, convex, round, and sometimes they swarm in waves. **Smell** decay / rotting	**- / rod**	**PD+** **KIA: Alk/A** **TSI: A/A**

Providencia rettgeri	Colonies are large, 4mm, gray white, opaque, shiny, smooth and convex. Brown pigmentation may occur in the center.	**- / rod**	**PD+** *تست urease برای سایر گونه‌های باکتری Providencia به صورت Variable می‌باشد.
Morganella morganii	Large, gray, ß-hemolytic and moist colonies *Morganella morganii*, swarms only in culture media with a small amount of agar.	**- / straight rod**	**PD+** *در محیط SIM، هاله‌ی ظریف مشکی ایجاد می‌شود که H2S نمی‌باشد. **(Black halo in SIM)**
Salmonella typhi (Group D Salmonella)	colonies are 1-3 mm, usually the S-type, they are large, gray-white and smooth. After subculturing there are also R-type ("rough" form), these are grainy, with an irregular surface and a serrated edge.	**- / rod**	**Anti-serum typing**
Salmonella paratyphi-Group A		**- / rod**	**Anti-serum typing**
Salmonella paratyphi-Group B, others(C,G)		**- / rod**	
Arizona		**- / rod**	**KIA: Alk/A** **TSI: A/A**
Edwardsiella		**- / rod**	
Citrobacter freundii	Colonies are 2-4 mm, smooth, low convex, moist, translucent or opaque, and gray with a shiny surface. Mucoid or rough forms may occur.	**- / long straight rod**	**KIA: Alk/A** **TSI: A/A**
Citrobacter diversus	Colonies are 2-4 mm, smooth, low convex, moist, translucent or opaque, and gray with a shiny surface. Mucoid or rough forms may occur.	**- / straight rod**	**KCN-** **Adonitol-**

Bacteria / test	I (Indole)	M (MR)	Vi (VP)	C (Citrate)
E. coli	+	+	-	-
Klebsiella	-	-	+	+
Enterobacter	-	-	+	+
Serratia	-	-	+	+
Enteropathogenic E. coli	+ (-)	+	-	-
Shigella	-	+	-	-

جدول 7- IMViC