

Bacteria	Tests ,sensitivity,treatment	General features	Diseases	Virulence factor and pathogenesis +info
Staphylococcus	Gram positive bacteria Catalase positive Mannitol salt agar	1 micrometer Irregular cluster (grape like) No motile Found in clothing,bed linens and fomites	Pimple,hair follicles infection and abscess Impetigo Folliculitis Furuncles or boils Carbuncles -fever ,chills and bacteremia -systemic UTI	Peptidoglycan activates the immune response (chemoattractant ,endotoxin like activity ,activate complement) Teichoic acids -antigenic ,activate immune response. MSCRAMM proteins 1) protein A 2) clumping factor -fibrinogen binding protein,complicating the recognition
Staph.aureus	Coagulase positive Catalase positive Nutrient agar plate Novobiocin sensitive Beta lactams	Beta hemolysis Grey to Golden yellow colonies Nasal carriage (20-50)% Higher incidence: 1)Eczematous skin diseases 2)Hospitalized patients and 3)medical personnel	Endocarditis Bacteremia Infection: Osteoarticular Skin and soft tissue Pleuropulmonary Device-related Wound infection Toxin related diseases : 1) scalded skin syndrome -infant 2) Food poisoning: abdominal cramping ,vomiting and diarrhea 3) Toxic shock: fever ,hypotension ,diffuse macular erythematous rash	MRSA -methicillin resistant strain (Antimicrobial resistance) Toxin-production

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Staph.epidermidis	Catalase positive Coagulase negative Novobiocin resistant	White -grey colonies Human microbiota of skin ,GI and respiratory tract	Catheters and shunt infection Prosthetic Device infection (endocarditis of artificial valve) Wound infection	Biofilm formation
Streptococcus (genus)	Gram positive Catalase negative ,different hemolytic pattern Media: blood agar	Microbiota	-	-
Strep.pyogenes	Catalase negative Blood agar Bacitracin sensitive	Spherical cocci 1-2 micrometer Chain arranged Large zone (b hemolytic) Group A Oropharynx +skin Person to person through respiratory droplets In winter	Pharyngitis Pyoderma Erysipelas Cellulitis Toxin related diseases Scarlet fever -pharyngitis +skin rash Toxic shock (streptococcal)- fasciitis +bacteremia Necrotizing fasciitis Post streptococcal glomerulonephritis Rheumatic fever -mm	-Hyaluronic acid capsule -poor immunogen,interfere phagocytosis -M protein - highly antigenic Blocking C3b(opsonization) -F protein+M -adherence to host cell and invade into epithelial -C5a peptidase (serine protease) -spe (toxin) lysogenic ,super antigen (shock) Streptolysin o -activate the formation of antibodies,but not in cutaneous infection . Strptokinase -lyse blood clot DNases -in pus Streptolysin s -beta hemolysis ,oxygen stable

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Strep.agalactiae	Catalase negative Blood agar Bacitracin resistant	Group b Beta hemolysis Lower GI +genitourinary tract Transient vaginal carriage (10-30)% of pregnant women Older and debilitating underlying condition	Bacteremia Pneumonia Bone and joint infection Skin and soft tissue infection Meningitis	
Strep.pneumonia	Catalase negative Blood agar Optochin sensitive	Encapsulated Diplococci (pair) 0.5-1.2 micrometer Oval Alpha hemolysis Throat and oro/nasopharynx In children,household with children Host response manifesting	Sinusitis Otitis media Pneumonia Bacteremia Meningitis	Pneumolysin (hemolysis,green product) Destroy ciliated epithelial cells and phagocytes IgA protease - destroy IgA which inhibits the attachment Amidase - release cell wall components (teichoic acid and peptidoglycan) Polysaccharide capsule(smooth) - serotype ,polyvalent vaccine Phosphorylcholine -bind to receptors of PAF and help cell invasion +amidase activity
Strep.viridans	Catalase negative Blood agar Optochin resistant	Oropharynx ,GI and genitourinary tract Collection of alpha and gamma cocci	Mitis -subacute endocarditis Sepsis in neutropenic Pneumonia Meningitis Mutans -bacteremia and dental caries	

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Enterococcus	Gram positive cocci Bile -esculin positive (black or dark brown appearance)	Arranged in short chain or pairs Enteric bacteria Large intestines and genitourinary tract E.faecalis & E.faecium Variable hemolysis pattern but mainly gamma Nosocomial infection	Catheterization and instrument associated infections	Aerobics and anaerobic Broad temperature 10-45 Wide ph range (4.6-9.9) High concentration of salt (bile salt) 1)Ability to adhere and form biofilms 2)Antibiotics resistance