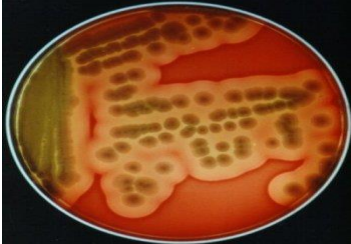


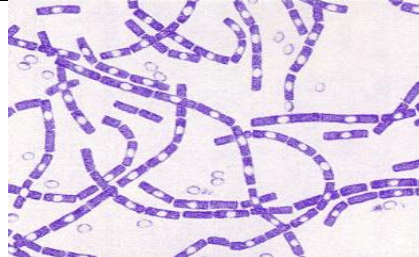

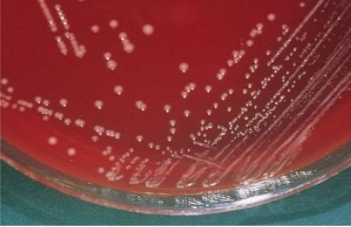



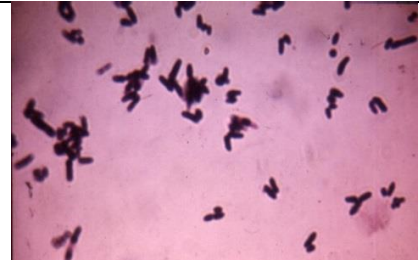
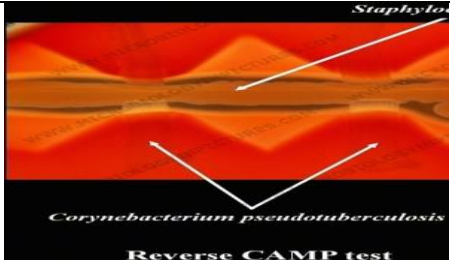

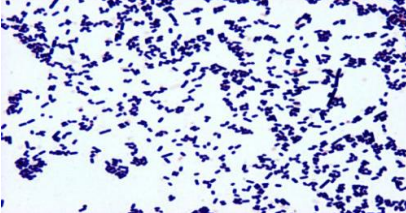
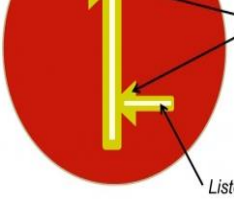


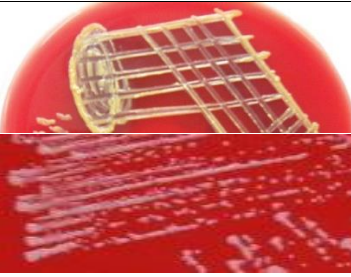
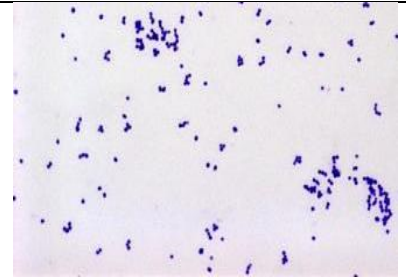
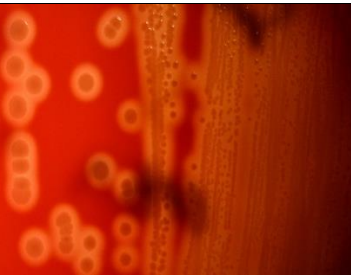
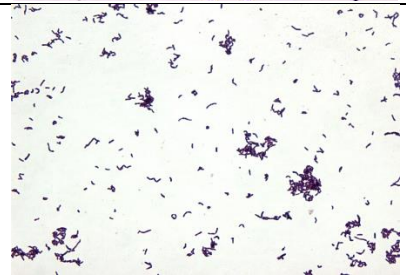
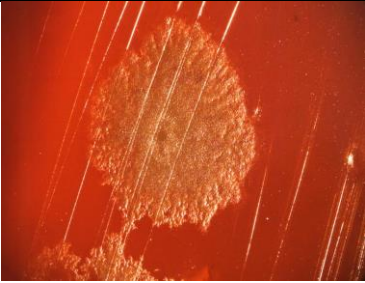



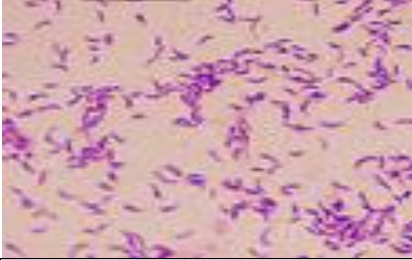
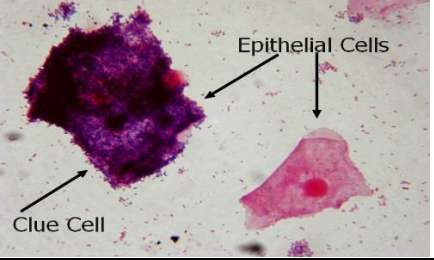
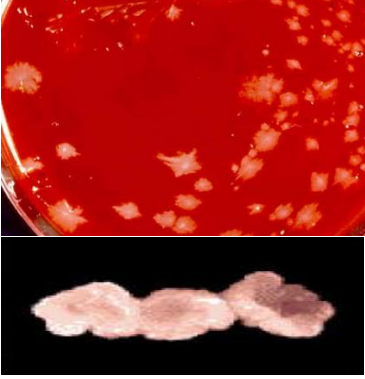
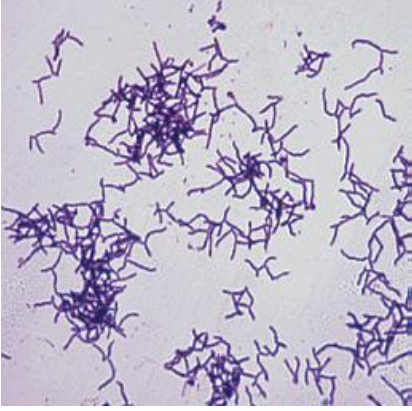

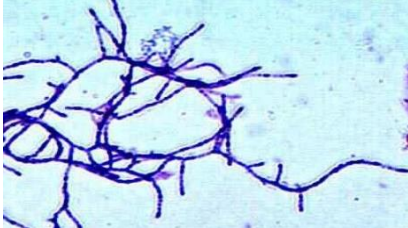
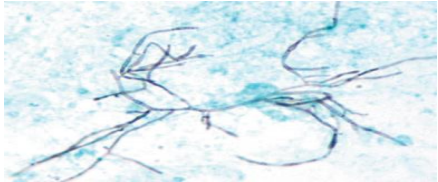

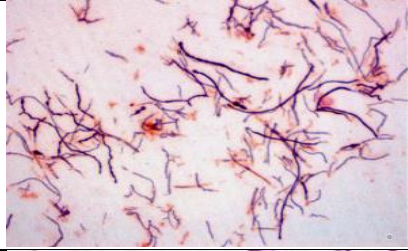


## Bacterial Identification – Gram Positive Rods

Organism	Plate Appearance	Gram Appearance	Other
<p><b>Bacillus (cereus)</b></p> <p>Most non-anthrax are <math>\beta</math>-haemolytic &amp; McFadyean's stain negative API 50 CHB</p>			
<p><i>Bacillus anthracis</i></p> <p>'box car' or cigar shaped chains Spore = central or subterminal &amp; oval McFadyean's stain = pos Non-haemolytic</p>			 <p><i>B. anthracis</i> "Medusa-head" colonies</p>
<p><i>Corynebacterium diphtheria</i></p> <p>Chinese letters Send for toxin testing Beaded appearance on Neisser of Alberts stain Hiss serum sugars API Coryne</p>			 <p>Hoyle's Tellurite agar (can also use Loeffler's and Tinsdale = halo effect)</p>
<p>Non-diphtheria corynebacteria</p> <p>Consider Thioglycolate broth for wound cultures +/- CAMP test</p> <p><i>C. ulcerans</i> <i>C. pseudotuberculosis</i> <i>C. minutissimum</i> <i>C. jeikeium</i></p>			 <p><i>Staphylococcus aureus</i> <i>Corynebacterium pseudotuberculosis</i> Reverse CAMP test</p>

<p><i>Listeria</i> Short intracellular rods (Gram variable) - API Listeria Sometimes <math>\beta</math>-haemolytic CAMP test positive</p>			 <p>Increased zone of <math>\beta</math>-hemolysis due to CAMP factor production</p> <p><i>Listeria monocytogenes</i></p>
<p><i>Erysipelothrix rhusiopathiae</i> Readily decolourises Slightly curved Gram+ rod Branching/V shaped pairs 5 – 10% CO<sup>2</sup> improves culture Indole/VP negative Catalase/oxidase negative Resistant to Glycopeptides</p>			
<p><i>Rhodococcus equi</i> Obligate aerobe Salmon-pink colonies Catalase/Lipase/Urease/Phosphatase + Gelatin negative API Coryne</p>			<p>Selective agar: colistin nalidixic agar (CNA) phenyl ethanol agar (PEA) ceftazidime novobicin agar</p>
<p><i>Arcanobacterium haemolyticum</i>  Pits the agar when colony is removed  API Coryne</p>			

<p><i>Clostridium botulinum</i></p> <p>Anaerobic GPR Oval sub-terminal spores API 20 A</p>			
<p><i>Clostridium tetani</i></p> <p>Obligate anaerobe 'drumstick' terminal spores Spreading film on enriched BA as motile Refer for toxin detection</p>			<p>ROAST:</p> <p>R = rigidity O = opisthotonus A = autonomic dysfunction S = spasms T = trismus</p>
<p>Mobiluncus</p> <p>Curved Gram-variable rods Require enriched media Slow growing anaerobes Oxidase/catalase/urease neg</p>			 <p>Epithelial Cells</p> <p>Clue Cell</p>
<p>Actinomyces</p> <p><i>A. israelii</i> (molar tooth colonies), <i>A. gerencseriae</i> + others</p> <p>Facultative anaerobes (use to distinguish from Nocardia)</p> <p>Incubate anaerobically/micro-aerophilic (5 – 10 % CO<sup>2</sup>)</p> <p>Send to reference lab for further ID</p>	 <p>Molar tooth colonies</p>		

<p>Nocardia  Obligate aerobic GPR – weakly acid fast  <i>N. asteroides</i> (star shaped colonies), <i>N. caviae</i>, <i>N. brasiliensis</i></p>			 <p>Ziehl Nielson staining</p>
<p>Actinomadura</p>			<p>Rinse grains from sinus tracts in 70% ethanol, crush in KOH and Gram stain – culture at 26°C and 37°C</p> <p>Macroscopic grains are often red</p>
<p>Streptomyces</p>	