Organisms used in Microbiology Lab

* *Staphylococcus aureus*
  + Gram+ coccus, clusters
  + TSA – small, pinhead colonies; golden brown to cream color
  + MaConkey – no growth
  + EMB – no growth
  + Blood agar – beta hemolysis
  + Motility test – no motility
  + UV light – more susceptible than *Bacillus*
  + Lysozyme test – resistant (unlike other Gram+ bacteria)
  + Protein A
    - Can detect using agglutination assay
  + Coagulase positive
  + Catalase positive
  + Oxidase negative
* *Staphylococcus epidermidis*
  + Gram+ coccus,
  + TSA – small, pinhead colonies; color of agar to whitish
  + MaConkey – no growth
  + EMB – no growth
  + Blood agar – gamma hemolysis
  + Motility test – no motility
  + Catalase positive
  + Oxidase negative
* *Streptococcus pyogenes*
  + Gram+ coccus, chains
  + TSA – white/translucent
  + MaConkey – no growth
  + EMB – no growth
  + Blood agar – beta hemolysis
  + Motility test – no motility
  + Catalase negative
  + Oxidase negative
  + Bacitracin susceptible
* *Streptococcus pneumoniae*
  + Gram+ coccus
  + TSA –
  + MaConkey - no growth
  + EMB – no growth
  + Blood agar – alpha hemolysis
* Mycobacterium phlei
  + Rod
  + Acid-fast
* *Enterococcus faecalis*
  + Gram+ coccus
  + TSA – white colonies
  + MaConkey – no growth
  + EMB – no growth
  + Blood agar – gamma hemolysis
* *Bacillus subtilis*
  + Gram+ rod
  + TSA – dry, irregular colonies
  + MaConkey – no growth
  + EMB – no growth
  + UV light – less susceptible than *S. aureus* (because of endospores)
* *Micrococcus luteus*
  + Gram+ coccus
  + TSA – small, pinhead colonies; yellow
  + MaConkey – no growth
  + EMB – no growth
  + Lysozyme test – sensitive to lysozyme
* *Serratia marcescens*
  + Gram- rod
  + TSA – red or white colonies
  + MaConkey – clear colonies (can’t ferment lactose), slow growth
  + EMB – pink colonies
* *Psuedomonas aeruginosa*
  + Gram- rod
  + Strict aerobe
  + TSA – green
  + MaConkey – clear colonies (can’t ferment lactose), fluoresce under uv
  + EMB – pink colonies (non lactose fermenter)
  + Motility test – motility
  + Lysozyme test – resistant to lysozyme (unlike most Gram+ bacteria)
  + Catalase positive
  + Oxidase positive
  + Citrate Positive
* Family Enterobacteriaceae – all of these can be characterized using the enterotube, all oxidase negative and catalase positive
  + *Escherichia coli*
    - Gram- coccobacillus
    - TSA – shiny colonies sometimes with dark center
    - MaConkey – pink colonies (can ferment lactose)
    - EMB – metallic green colonies (excessive lactose fermenter, lowers pH)
    - Blood agar – beta hemolysis with infective strains
    - Motility test – motility
    - Citrate Negative
  + *Enterobacter aerogenes*
    - Gram- rod
    - TSA – shiny
    - MaConkey – pink colonies (can ferment lactose)
    - EMB – purple dark center colonies (lactose fermenter, but not excessive like E. coli)
  + *Salmonella typhimurium*
    - Gram- rod
    - MaConkey – clear colonies (can’t ferment lactose)
    - EMB – pink colonies (non lactose fermenter)
    - Motility test - motility
  + *Proteus mirabilis*
    - Gram- rod
    - MaConkey – clear colonies (can’t ferment lactose)
    - Enterotube
  + *Proteus vulgaris*
    - Gram- rod
    - MaConkey – whitish to clear colonies
    - EMB – pink colonies (non lactose fermenter)
    - Motility test - motility
  + *Citrobacter*
  + *Klebsiella*
  + *Yersinia*
  + *Shigella*