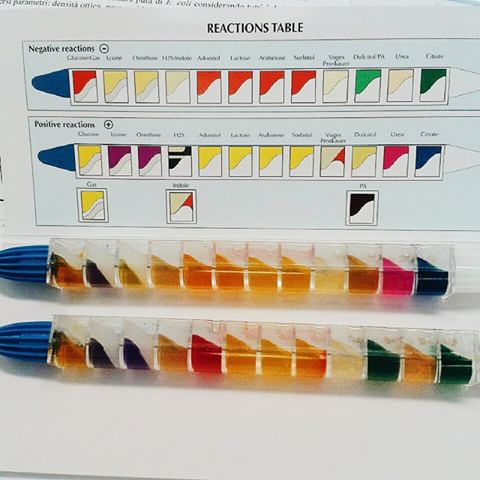
**MCB2010L –Microbiology Lab**

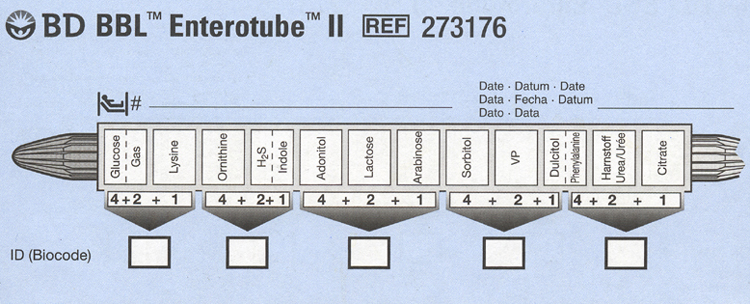
**Exercise 15: Bacterial Identification of Enterobacteriaceae Using EnteroPluri System**

* + The EnteroPluri is a biochemical identification system for the identification of members of the Enterobacteriaceae family.
    - Enterobacteriaceae are gram negative, oxidase negative
    - They are facultative anaerobes – they ferment but are not killed in the presence of oxygen
    - Include *E.coli, Salmonella, Yersinia, Klebsiella, Pseudomonas, Shigella*
  + The tube is a self-contained, compartmented plastic tube containing twelve different media that allow determination of 15 biochemical reactions.
    - For example: does the bacteria ferment glucose and produce gas?; does the bacteria ferment lactose?; does the bacteria use citrate?
    - Combination of answers to these questions can indicate what bacteria you are dealing with.
  + When would you use the EnteroPluri tube?

|  |  |  |
| --- | --- | --- |
| Is the bacteria in question gram -? | YES | NO |
| Is the bacteria bacillus in shape? | YES | NO |
| Is the bacteria oxidase negative?   * Cytochrome oxidase is what is used at end of electron transport chain * Enterobacteriaceae don’t need this because they are anaerobic | YES | NO |
|  | If you have circled YES for all, then you can use the EnteroPluri tube to further characterize/identify your unknown |  |



* + Work in pairs
    - Obtain one EnteroPluri tube.
    - Inoculate the tube with unknown bacteria*.*
    - Incubate overnight and interpret all reactions in the next period- page 96-98.



**Exercise 16: Antibiotic Sensitivity Using the Kirby-Bauer Method**

* + Once the pathogen has been identified, the physician will select an appropriate drug for the effective treatment of the disease.
  + The Kirby-Bauer is a highly standardize disc diffusion method that is approved for wide use in clinical laboratories.
  + Work in pair; procedure – page 102
    - Obtain two Muller-Hinton agar plates.
      * Why Muller-Hinton? This agar grows a variety of microbes. Also detoxifies toxins that the bacterial release which might alter antibiotic results.
    - Inoculate one plate with *Pseudomonas aeruginosa* and the other plate with *Staphylococcus aureus.*
    - Place BBL discs using dispenser.
    - Incubate the plates overnight
    - Examine plates and measure zones of inhibition in mm and compare with the chart provided – page 104-105
      * Just because there is a zone of inhibition does not mean that the bacteria is sensitive to the antibiotic – it all depends on the species and the antibiotic (that’s why it’s important to measure the zone and compare to the chart)

