BIOS242 Lab 11

Name: ……

Lab 11: Bacteria of the Skin

Learning Objectives:

- Identify the growth of skin bacteria on different types of selective and differential media.
- Identify pathogenic from non-pathogenic bacteria

Introduction:

Our skin forms the first line of defense. It has several characteristics that makes it an inhospitable environment for the growth characteristics of skin include: high percentage of salt, low pH from 4-5.5, sebum, antimicrobial chemicals; an outer layer of de to pathogens; mechanical defenses such as continuous sloughing off of skin, and dendritic macrophages. Skin also harbors a ra including *Staphylococcus* and *Diptheriae* species that act as normal antagonist microbiota. Only the organisms that can tolera approximately 7.5% salt concentration are able to grow on skin.

Mannitol salt agar (MSA) plates mimic our skin asthey contain a high salt concentration. Other components of MSA plates are indicator phenol red (yellow at pH <6.8 and red at pH higher than that). High salt concentration makes this growth medium se tolerate 7.5% salt. Furthermore, pathogenic bacteria use Mannitol most commonly as a source of carbon. When sugar breaks acids; this lowers the pH of media and turns the indicator yellow. Hence this plate also acts as differential media.

Note: Use personal protective equipment (PPE) at all times. Follow instructions at all times. Do not open the plates containing

Materials:

MSA plates, nutrient agar plates, sterile water, sterile swabs, marker, ruler, pure cultures of *B. subtilis, E. coli, S. marcescens* a incinerators

Method:

1. For this experiment, you will work in a team of 4 students.