SIM Agar

Introduction

SIM (sulfide, indole, motility) medium is an example of a multi-test medium, that is, it tests more than one aspect of the bacterium’s metabolism at a time. In this case, the production of hydrogen sulfide, the formation of indole, and motility.

Procedure

1. Obtain a deep of SIM medium.
2. Using an inoculating needle, stab the medium about 2/3 of the way down and out the same pathway as quickly as possible with your assigned organism.
3. Incubate the tube for at least 48 hours.
4. After the incubation period, examine your tube.

Interpretation

Hydrogen sulfide (H$_2$S) production is indicated by a black color in the medium.

Indole production is indicated by a red ring on the surface of the deep after adding Kovac’s reagent.

Motility is indicated by the ability of the organism to ‘fan’ away from the streak. Or, the entire tube may appear cloudy when compared to an un-inoculated control. If the organism is non-motile, the growth will only appear along the stab line.

![H$_2$S Positive](image1)

![Indole Positive](image2)

![Motility Negative](image3)