Urease/Indole Test

CK4651

Background
The rapid detection of urease is widely used as a first-step in screening non-lactose fermenting colonies from enteric media. Enteric pathogens such as Salmonellae and Shigellae are urease negative whilst organisms such as Proteus, Morganella, Klebsiella and some Citrobacter are strongly urease positive. The production of indole from Tryptophan is a characteristic absent in salmonella but present in E coli, Morganella and some species of Klebsiella, Aerobacter & Citrobacter. The purpose of this test is to screen for possible salmonella from suspect colonies on enteric culture media.

Method
Add 3-5 drops of distilled water to the Urease/Indole Test tube.
Inoculate heavily with the test organism from a fresh overnight culture. Incubate at 37°C.
After 1 hour if the Urease is positive (a pink colour develops) discard as not salmonella or perform the Indole test by addition of Kovacs reagent.
If the Urease is negative continue incubation for a further 5 hours. After this time perform the Indole test by addition of Kovacs reagent

A positive Urease result is indicated by the production of a pink or reddish colour.

A positive Indole is indicated by the development of a yellow colour with a red rim.

Discussion
A positive urease test rules out the possibility of the test organism being salmonella or shigella so no further identification is necessary. If the laboratory work patterns do not allow a full 1 hour incubation it is possible to read the urease results after only 15 minutes, a few positive urease results may be missed but these organisms will go on to be more fully identified. It is intended that a laboratory chooses an incubation time for the Urease (between 15 minutes & 6 hours) that fits in with its workflow given that longer incubation will yield more accurate results.
If the organism is Urease negative and Indole negative it is possibly salmonella and further identification work should be undertaken.

Quality Control
This product should be tested prior to use with organisms of known reactivity. Positive & negative controls should be run in accordance with Good Laboratory Practice.

Health & Safety Information
Each tablet contains approximately 5 mg of Urea & 2.5mg of Tryptophane. This product does not contain any material known to be hazardous.

Storage & shelf life
Store tightly closed in a dry place at room temperature.

Reference
Bailey & Scott’s Diagnostic Microbiology 7th Edition Chapter 27 ‘Enterobacteriacae’