

OF test

OF test or **oxidation-fermentation test** is a test used to **determine the properties of bacteria**. After performing the test, we can determine if the bacteria is able to grow under anaerobic conditions.

Execution

In the OF test, we need two tubes filled with a solution containing glucose. Using both inoculating loops, add biomass containing the given microbe to both test tubes. We then add a few drops of paraffin oil to one of these tubes to simulate the anaerobic environment. Then let both tubes stand in warm rooms in a rack for 24 hours. After 24 hours we read the results:

- if both tubes are yellow, the bacteria is facultatively anaerobic (eg Enterobacteria);[1] (https://www.wikiskripta.eu/w/OF_test#/media/Soubor:OF_test_2.jpg)
- if one is green (the one with paraffin oil) and the other yellow, the microbe is strictly aerobic (eg Pseudomonas).[2] (https://www.wikiskripta.eu/w/OF_test#/media/Soubor:OF_test.jpg)

Principle

The solution in the test tubes contains glucose, which serves as a nutrient supply for the growing bacteria. If bacteria use it in the solution, the solution turns yellow. Bacteria use glucose only if they survive - they only survive in an environment that suits them. Therefore, if the bacteria is aerobic, it is not able to survive in an anaerobic environment (in our case, a tube waxed with paraffin oil), so it will not use glucose and the solution will remain green. If the bacteria is facultatively anaerobic, it survives in both tubes, processes glucose in both, and turns both tubes yellow.

References

Related articles

- ENTEROtest

External links

- Microbeonline (<https://microbeonline.com/oxidative-fermentative-test-principle-procedure-results/>)

Literature

- MOŠKO, Tibor. Mikrobiologické testy [přednáška k předmětu Mikrobiologie 2, obor Všeobecné lékařství, 1. LF Univerzita Karlova]. Praha. 10.10.2016.
- JULÁK, Jaroslav. Praktická cvičení a semináře z lékařské mikrobiologie. 2. vydání. Praha : Karolinum, 2009. 113 s. ISBN 978-80-246-1141-9.