Wet amounts and hanging drops - lab report example

Health & Medicine

Wet amounts and Hanging Drops

Wet amounts and Hanging Drops Purpose of the experiment The main objective of the test is to perform a microscopic analysis using wet amounts technique and hanging drops technique. The other reason is to recognize the application and disadvantages of the two techniques for observing bacteria. The experiment was specifically performed to recognize the existing dissimilarities between motion and true motility.

Method

The two methods that can be effectively used to detect active cells in a liquid include wet amount method and the hanging drop method. In the hanging drop method, a little drip of liquid is suspended from the bottom of a coverslip, over a thin depression in the distinct slide. On the other hand, wet amount method comprises of a very tiny film of liquid sandwiched between a microscopic and a cover slip respectively (Pommerville& Alcamo, 2010). In the two cases, temperature generated from the lamp and concentrated on the slide by the condenser will start to destroy the bacteria within the shortest time possible. Notably, the light should not be on if there is nobody observing the slides. If the cells are not available shortly; a new slide should be made in order to measure motility precisely.

Procedure

Preparation of hanging drop: to perform this experiment, a small amount of Vaseline was placed at both ends of the cover slip using a small stick. A tiny wax pencil spot was also placed close to one corner to assist in focusing. A little drip of culture was then placed in the middle of the cover slip. For the Vaseline to be in touch with the slide and the depression to be above the

culture drop, the depression slide was upturned over the cover slip (Pommerville& Alcamo, 2010). The slide was taken and overturned slowly and cautiously to ensure that the position of the culture drop does not change. This was meant to assist in making observations close to the edge of the culture drop and not in the middle.

Preparation of wet amount: the preparation involved the creation of a single tiny drip of culture from numerous loopfuls. This was then followed by gripping a cover slide perpendicularly to the main slide while holding the opposite phase of the cover slide that does not have a drop. After that, the coverslip was gradually and cautiously joined with the main slide to ensure that the drip is equally distributed between the slide and coverslip (Pommerville& Alcamo, 2010). Notably, to prevent the coverslip from floating and complicating the process of focusing, only a small amount of liquid was required. Since it is not easy to observe unstained bacteria, using little water was necessary because it assists in focusing on the edge of the bubble when observing the culture.

Observations

After the experiment, the colonies were observed as shimmering red on agar plates. When an epifluorescence microscope was used during the observation, the cells were established to be having inherent fluorescence. Some of the bacteria were observed moving about while others were motionless. The two motions observed are the gliding motion and Brownian motion. Gliding motion occurs when the bacteria glide over moist surface. Brownian motion is observed when unseen molecules strike the bacteria.

Conclusion

Considering that some of the bacteria were on motion, it can be concluded that the organism is motile. The fact that the cells had inherent fluorescence means that they are not stained. The use of epifluorescence made the visualization of live bacteria less complex. Arguably, the use of this compound provided more information for the analysis.

Reference

Pommerville, J. C., & Alcamo, I. Edward. (2010). Alcamos laboratory fundamentals of microbiology. Sudbury, Mass: Jones and Bartlett Learning.