Medical microbiology

Lab 7

Bacterial motility

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Motility

Motility occurs in rod shaped bacteria and spirochetes but is almost never found in cocci . The major organelles of motility in bacteria are flagella . Flagella allow cells to move toward nutrients in the environment or move away from harmful substances , such as acids , in a complicated process called chemotaxis .

Motility can be determined by several methods :

1-Wet Mount method

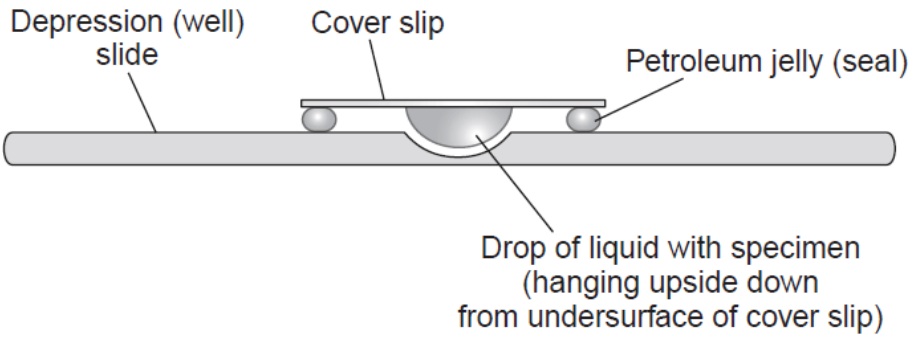
2-Hanging Drop technique 3-Semisolid media

Most bacterial microscopic preparations result in death of the microorganisms due to heat-fixing and staining . Simple wet mounts and the hanging drop technique allow observation of living cells to determine motility .

A wet mount preparation is made by placing the specimen in a drop of water on a microscope slide and covering it with a cover glass then examin it under microscope .

A hanging drop preparation allows longer observation of the specimen since it doesn’t' dry out as quickly . A thin ring of petroleum jelly is applied around the well of a depression slide . A drop of water is then placed in the center of the cover glass and living microbes are transferred into it . The depression microscope slide is carefully placed over the cover glass in such a way that the drop is received into the depression and is undisturbed . The petroleum jelly causes the cover glass to stick to the slide .

The preparation may then be picked up , inverted so the cover glass is on top , and placed under the microscope for examination .



Hanging drop method

Semisolid media : Inoculate tubes of semisolid media (contain agar about 0.3-0.5 %) with the organisms by stab (using needle) and incubate it for 24 hours .

Left positive and right negative