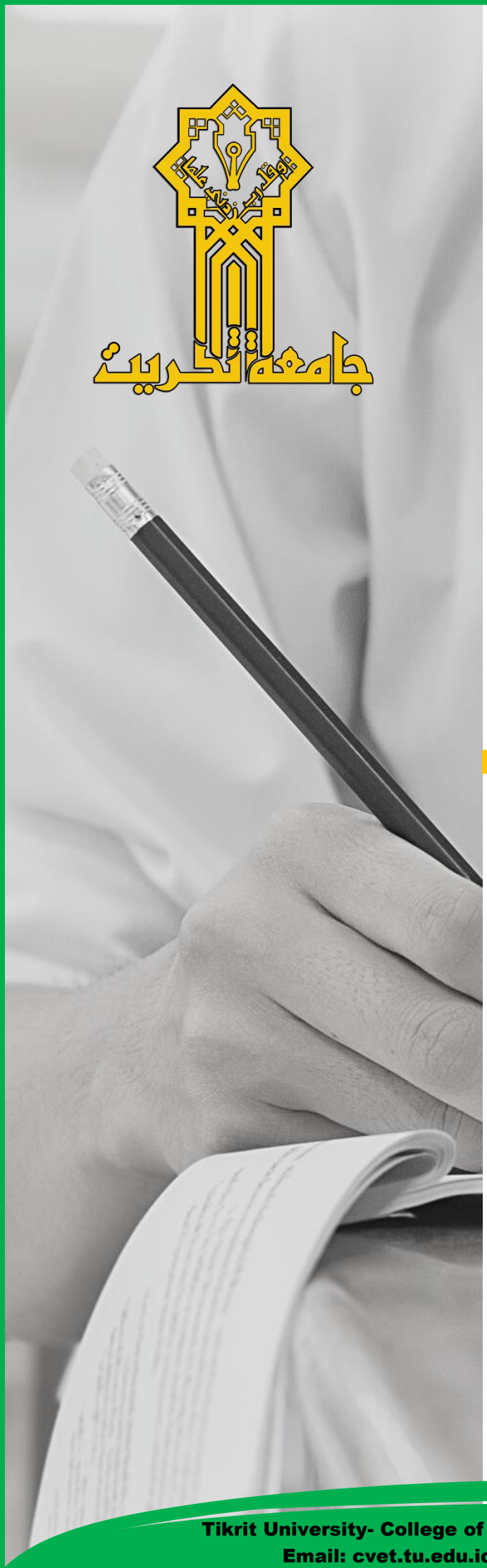

Tikrit University
College of Veterinary Medicine

Lect.4: Microbiology

Subject name: Bacterial motility

Subject year:Third-year

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Lecturers link

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Bacterial Motility

bacteria can be divided according to motility:-

1- Motile bacteria e.g Proteus
2- Non motile bacteria e.g Micrococcus

There are several types of bacteria movement, true motility(self – propulsion) .

1- Flagella :- fine hair appendage, free from one end and connected from the other end by body cell. It's length is about 5-15 µm, while it's diameter is about 10-20 µm It can not be seen by light microscope, but it can be seen by dark field microscope or by using specific dyes that precipitate (accumulate) on the surface of flagella and increase it's thickness.

2-Inflexion motility:- this type of motility is seen bacteria that have no flagella e.g a spirochaetes and the motility occurred by contraction side and reflex that produce transitional movement . It can be seen by using dark field microscope.

3- Gliding motility :- this type of motility is seen in some types of slime bacteria that doesn't have flagella hence it moves by gliding on the surface of solid media.

Brownian movement(false motility):-is a vibrational movement results from the random motion ot the water molecules bombarding

the bacteria and cause and causing them to move .

Methods of motility determination:-

1- Wet mount slide.
2- Mixing with the oil.
3- Hanging drop slides .
4 - Semisolid stabbing method.

1- Wet mount slide -:

a- it is the simplest way to determine motility when working with non pathogens.

b- Place afew loopfuls of the organism on aclean slide and cover it with a cover glass then examine under an oil immersion objective .

2- Mixing with the oil:-

a- in this procedure ,adrop of oil placed on the slide then a drop of bacteria suspension mixed with oil, the oil droplets will track the bacteria thus it can be seen clearly .

3-Hanging drop slides :-

drop of bacteria suspension is placed on cover glass, which is then placed aspecial slide that has aconcave depression in its center.the glass is held in place with Vaseline, thus forming an enclosed glass chamber that prevent drying. other method is placing Vaseline in the four corners of cover silde for fast technique.

4- Semisolid stabbing method:-

a- this mehod is widely used with pathogenic bacteria , don't use the three previous methods, to avoid infection.

b-In this procedure the organism is inoculated by stabbing the semisolid medium(Gelatin 12-15% or 0.5-1%agar) with inoculating needle.

c-Motile bacteria move away from the line of inoculation in to the un inoculated surrounding medium, non motile bacteria will be found only along the line of inoculation.