SI Microbiology - Full Discipline Demo

Motility Testing

Final Report - Answer Guide

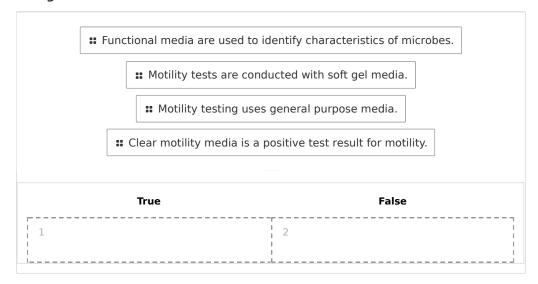
Institution Science Interactive University

SessionSI Microbiology - Full Discipline DemoCourseSI Microbiology - Full Discipline Demo

Instructor Sales SI Demo

Test Your Knowledge

Categorize each statement as True or False.



Correct answers:

1 Functional media are used to identify characteristics of microbes.

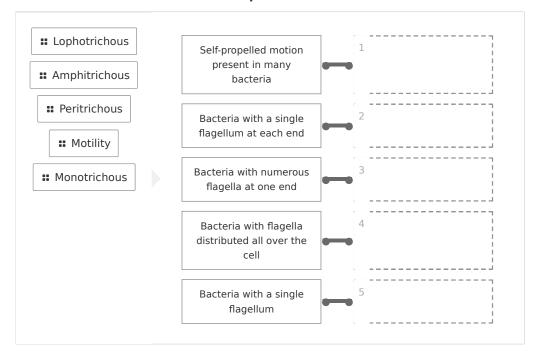
Motility tests are conducted with soft gel media.

2 Motility testing uses general purpose media.

Clear motility media is a positive test result for motility.



Match each term to the best description.



Correct answers:

- 1 Motility 2 Amphitrichous 3 Lophotrichous 4 Peritrichous
- 5 Monotrichous

Exploration

____ media allow many types of microbes to grow but contain dyes or structural components that enable differences between microbes to be visualized.

- General purpose
- Differential
- Enriched
- Selective



Bacteria move by		
○ flagella		
axial filaments		
 slime secretions 		
All of the above	~	
Motility media is a used to detect bacterial movement.		
○ firm agar		
 concentrated broth 		
o soft gel	~	
thin broth		
Which type of functional media is the motility media used in this exercise? Referesults recorded in Data Table 1 and Photo 1 in your explanation.	ference your	
Motility media is a type of differential media that permits the identification of two ty microbes: motile and non-motile. <i>E. coli</i> and <i>S. epidermidis</i> produced different grow when cultured in motility media as recorded in Data Table 1 and Photo 1.		
What can you conclude regarding the motility of <i>E. coli</i> and <i>S. epidermidis</i> based on your results? Reference Data Table 1 and Photo 1 in your explanation.		
S. epidermidis produced negative results by only growing in the stab line of the more recorded in Data Table 1 and Photo 1, meaning that the microbe is non-motile. E. copositive results by growing throughout the agar tube producing overall turbidity and observable stab line as recorded in Data Table 1 and Photo 1. E. coli is motile.	oli produced	



Data Table 1: Motility Test Results (SAMPLE ANSWER BELOW)

Microbe	Observations
Escherichia coli	Poorly defined stab line, turbid media
Staphylococcus epidermidis	Clearly defined stab line, no turbidity in media

Photo 1: Incubated Motility Media Cultures (SAMPLE ANSWER BELOW)

Note to instructors: S epi tube results should depict a faint outline of original stab line and/or gas bubbles within the stab line. Original stab line or associated gas bubbles should not be present in E coli tube.



Competency Review media contain agent(s) that prohibit the growth of some microbes. Differential Enriched Selective General purpose Motility media enables differences between microbes to be visualized. True False Motility is an important characteristic for classifying microbes. True False A ____ bacteria has a single flagellum. monotrichous amphitrichous lophotrichous peritrichous Motility media prevents the diffusion of non-motile microbes. True



False

Motility testing is performed by stabbing a needle containing a microbe sample into a tube of motility media.	
○ True	~
□ False	
A(n) should be used to inoculate a motility media tube.	
O drop of liquid culture	
 lyophilized tablet 	
 single microbe colony 	~
environmental sample	
S. epidermidis produces a defined stab line in motility gels after incubat indicating that it is	ion
o motile	
o non-motile	~
Olophotrichous	
peritrichous	

Extension Questions

A microbiology student used TSA pour tubes instead of motility media tubes to perform motility testing on *E. coli* and *S. epidermidis* and received identical results for both bacteria species. Apply your knowledge of media types and motility testing to explain why the student failed to demonstrate motility using TSA pour tubes. (SAMPLE ANSWER BELOW)

TSA agar is a general purpose firm agar media designed to grow most microbes equally. Motility media is a soft gel differential media designed to visually differentiate motile from non-motile microorganisms. TSA agar is too firm to allow microbes to diffuse from a stab line resulting in neither *E. coli* nor *S. epidermidis* differing in growth patterns or exhibiting motility within the tube.

