

Outreach Activity Report

Jaypee University of Information Technology

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Activity: Microbiology Workshop

Date: 07 December 2018

Places of Activity: N.D.P.S.S School Galore at Budhwin, Hamirpur H.P.

Target Audience: Students of +1 and +2 and teachers of the school

Team members:

Faculty: Prof. Dr. Sudhir Kumar, Head of Department of BT and BI

Ph.D. scholar: Neha Kumari Department of BT and BI

The content of the activity:

- ✚ Lecture by Dr. Sudhir Kumar on the scope and job opportunities in the field of biotechnology and bioinformatics.
- ✚ Lab demonstrations: Hand on microbiologically KOH string test was done with students and teachers.

The outcome of the activity:

- The students actively participated in the interactive session as well performed string test for Gram-positive and Gram-negative bacteria successfully. This activity resulted in an increase in their interest in the field of microbiology and biotechnology as evident from their queries.
- The feedback from participants in this activity has been positive. Students ask questions in the interactive session which show their interest and curiosity. A student also emailed the summarized activity of that day in written form which showed their interest and positive attitude in the area of Microbiology and Biotechnology.



Students performing string test



Group photograph with students

Q:- How can we identify the bacteria (gram +ve or gram -ve) without using microscope or stain?
 Ans:- To identify the bacteria (gram +ve or gram -ve) without using microscope or stain, take 3% of KOH solution's drop on the slide along with the bacteria culture. If the string form then the bacteria is gram negative and if the string does not form then the bacteria is gram positive. The string forms in the gram negative because on addition of KOH its DNA comes out and the solution becomes viscous, which results in the formation of string. But in gram +ve bacteria the DNA content doesn't come out and no string is formed. This is because there is a difference in the nature of cell wall.

<u>GRAM POSITIVE BACTERIA</u>	<u>GRAM NEGATIVE BACTERIA</u>
i) The bacteria retain purple crystal violet colour after primary treatment and washing with alcohol	i) The bacteria do not retain crystal violet stain on washing alcohol.
ii) They contain polynucleotides	ii) They contain lipid (70-80%).

* Limitations of experiment:-
 The limitation of this experiment is that we cannot determine the shape of cells of gram +ve and gram negative bacteria.

Q:- Will the string form if both gram +ve and gram -ve cultures are taken together?
 Ans:- The string form when the gram +ve culture is less than the gram -ve culture and the string will not form if the gram +ve culture is more than the gram -ve culture.

Write up by a student