

Report on

**Hands-on Training of Real-Time PCR Testing, 14<sup>th</sup> & 15<sup>th</sup> February 2023**

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Department of Botany and Department of Microbiology, Faculty of Science, at Dr. APJ Abdul Kalam Govt. College, Silvassa, jointly organized a Hands-On Training of Real-Time PCR Testing, in collaboration with Department of Microbiology, NAMO Medical Education and Research Institute, Silvassa, for Final Year B. Sc. students of Botany and Microbiology specialization. Department of Botany and Microbiology are thankful to kind cooperation of Dr. Ram Chandra Goyal, Dean, NAMO-MERI and Dr. Narayan Kamath, Head and Professor, Department of Microbiology, NAMO-MERI, Silvassa, for their kind cooperation for skill development in Science graduates. The Hands-On Training was scheduled on 14<sup>th</sup> and 15<sup>th</sup> February 2023, at The Virology Laboratory, Dadra, Silvassa, during 9 am to 4 pm.

Team of 19 students, 10 students of B. Sc. Microbiology and 9 students of B. Sc. Botany reached the Virology laboratory, Dadra, in time. Dr. Kalpesh Mahla, Visiting Faculty, Dr. APJ Abdul Kalam Govt. College, accompanied the students and also provided technical assistance during the training. Students were assembled in conference room for initial instructions and theoretical explanation of the training and the instruments to be used. Prof. (Dr.) Narayan Kamath, Head, Department of Microbiology, NAMO-MERI explained the basics of instruments and general laboratory safety instructions. Shri Mustafa Vohra, State Microbiologist, The Virology Lab, Dadra, was the resource person, for technical handling and Hands-On, from NAMO-MERI, Silvassa. Shri Dipesh Patel, Laboratory Technician, also provided the technical assistance during the training.

Further, students were explained about the concept of Polymerase Chain Reaction (PCR) and its recent type Real-Time PCR (RT-PCR) by Dr. Narayan Kamath. Students were also given practical hints about PCR protocol, the basic steps by Dr. Kalpesh Mahla. Further, students were taken in laboratory, where they prepared the Master Mix for RT-PCR and put it for PCR run. Students were also taught about setting up of a PCR reaction cycle program using Thermal Cycler. The PCR run was started and then students were given a very basic overview of Primer designing. Then, RT-PCR graph analysis and its quantitation was taught by Shri Mustafa Vohra, in detail.

After a short break, the team of students was taken for learning about Throat swab specimen (sample) collection and also about the Transport media, the Transport vial, and Refrigeration for storage of sample till analysis. Students were also demonstrated about

Refrigerated transportation facility for Specimen till further analysis. Shri Dipesh Patel explained and made students learn about RNA extraction from sample, its purification, and further analysis. He also made them learn how to use ultracentrifuge during nucleic acid extraction. Students were given an overview of use of magnetic beads in extraction and purification of nucleic acids. The sessions were brainstorming with lot of questions from student side and content answers from the resource persons. The first day ended at about 5:30 pm.

Next day, 15<sup>th</sup> February 2023, all 19 students reached the Virology lab, Dadra, in time. Students were again given a quick revision of PCR technique, theoretically and practically. Detailed session was conducted to make them aware about endless applications of PCR in all fields of Science. Further, students were shown an Oxford Nanopore Sequencer, and were given an overview of how to use it. Sophisticated instruments like Gel Electrophoresis assembly, Refrigerated storage facility and thermostatically controlled incubator with Rotary shaker was also demonstrated and practically students were allowed to operate it for practice and Hands-on.

In the concluding session, students were given know-how of laboratory activities. Also, Prof. Kamath motivated students to apply for Summer Training session for detailed learning and practice, during vacations. The two days Hands-on added a lot to the learning and instrumentation skills of participated students from Botany and Microbiology, which is also evident from their feedback. We, at Department of Botany and Microbiology are thankful to Principal sir and college administration to provide us an opportunity for this skill enhancement initiative for our students. Participation certificates were given by Hon'ble collector, Smt. Bhanu Prabha, Silvassa, on 18<sup>th</sup> February 2023. We are thankful to madam for motivating our students. We wish to have more such skill based programs, which adds to the subject content apart from classroom learning.

## Few Glimpses of the Hands-On training of Real-Time PCR Testing

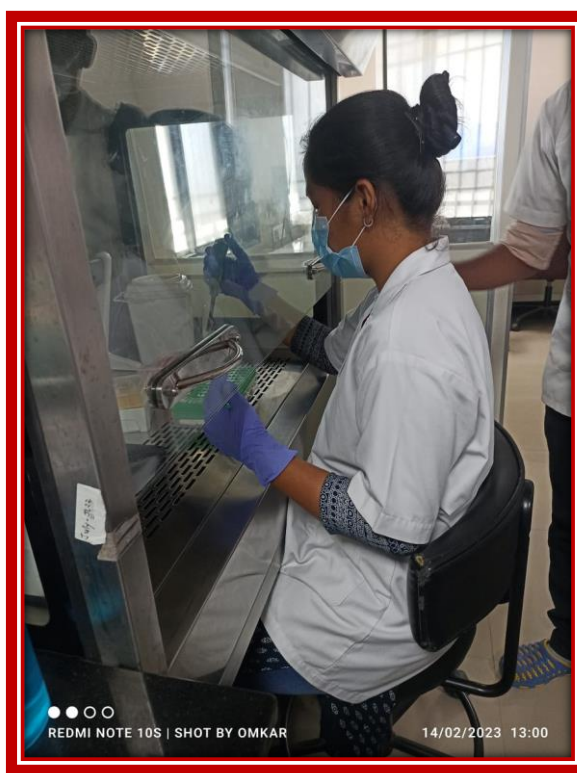
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