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Category: General SOP to perform Polymerase Chain Reaction (PCR) in Genetics laboratory.

Title: Operating the Nanophotometer in the Department of Clinical Pharmacology K.E.M. Hospital, Parel, Mumbai.

SOP No.: Pre-PCR INS-05

Date first effective: 1st January 2025

Review date: 31st December 2025

Department of Clinical Pharmacology, 1st floor, New MS building Seth GS Medical College & KEM Hospital, Parel, Mumbai 400012.

Category: General SOP for instruments in Genetics laboratory.

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Purpose: The purpose of this Standard Operating Procedure (SOP) is to describe the method for operating the Nanophotometer for quantification and purity assessment of nucleic acid samples in the Department of Clinical Pharmacology (DCP), Seth GS Medical College and KEM Hospital, Mumbai.

Scope: This SOP is limited for operating the Nanophotometer for nucleic acid samples.

Responsibilities:

Primary Responsibility: Divya Bhare
Lab Technician

Divya Bhare
30 Dec 2024

Secondary Responsibility: Dr. Sheetal Kudtarkar
Project Scientist

References: Operational manual

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Detailed Instructions:

1. Switch ON the main switch and press ON key to turn the instrument ON.
2. The display shows the following options:
 - a. Label Guard applications
 - b. Cuvette applications
 - c. Functions
 - d. User methods
 - e. Utilities
3. Select LabelGuard applications and select the Nucleic acid folder and then select dsDNA method.
4. Insert the LabelGuard™ Microliter Cell into the cell holder with the cell windows facing the light beam. The light beam is directed from RIGHT to LEFT as indicated with small blue arrows. Insert the LabelGuard™ Microliter Cell always in same direction.
5. Pipette appropriate volume onto the center of measuring window. (Warning: Do not overfill the well) i.e.

	0.2 mm Lid (factor 50) (ng/μL)
dsDNA	25-4000
Corresponding Absorbance Value Limits for A 260	0.010 to 1.6Abs
Required Sample Volume	0.7 to 4 μL

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6. Press sample key to accept and enter the result screen which shows concentrations i.e. A230, A260 and A280 & ratio A260/A280 and A260/A230.
7. Press blank key to measure reference i.e. distilled water.
8. Make sure that the lid fits exactly for the measurement onto the positioning supports mounted to the body of the cell.
9. After measuring the blank, take the lid off and remove residues from the measurement window and lid mirror. Clean the measurement window and lid mirror well with a lab wipe Eg. Soft tissue paper. Do not use aggressive solvents like strong acids or bases or organic solvents at any time. **Imp. Note:** Residual fluffs must be removed for optimum performance.
10. Now press sample key and measure the concentration of the sample. After measuring the sample clean it properly.
11. If there is more than one sample, then measure blank after every samples measurement and repeat the steps 7 and 8.
12. After the work is complete remove the Label Guard and clean it.
13. Press escape key and then press sample key to confirm and return to the Nucleic acid folder.
14. Then again press escape key to return to the main menu.
15. Press OFF key to turn off the instrument and then press the main switch button.

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