

January 24, 2012

NIQ for Real Time PCR MACHINE

Quotations are invited for a “**Real Time PCR machine**” with the following specifications. Technical and financial bids are to be submitted in separate sealed envelopes and placed together in a sealed cover, superscribed “**Quotations for Real Time PCR**”. The quotations should be submitted to “**Dr. Ritu Kulshreshtha, Block I, Room 133, Department of Biochemical Engineering and Biotechnology, IIT Delhi, New Delhi 110016**” on or before 09.02.2012.

Specifications for Real Time PCR-

Thermal Cycling System	Peltier-based automated integrated system thermal cycler, Open platform that provides flexibility with chemistries, reagents and plastic ware
Block Format	96-well block
Compatible Consumables	96-well (0.2 mL) plates or 0.2ml tubes, strips and plates
Supported Volumes	5-50 µl
Sample Ramp Rate	5°C/sec with an average ramp rate of minimum 3°C/sec
Temperature Range	4°C-100°C
Temperature Accuracy	+/-0.25°C (35°C to 95°C)
Temperature Uniformity	+/-0.4°C, 30 seconds after clock start.
Gradient capability	Gradient capacity in Real-time from 30-100 C with a temperature span of 24C
Melt Curve Resolution	As small as 0.1°C
Optical System	Should have 6 filtered LED excitation source, and six filtered photodiode for detection
Excitation Emission range	450- 730nm
Calibrated Dyes at Installation	FAM™, SYBR® Green, VIC®, HEX, TET, CAL, FLUOR GOLD or ROX dyes
Passive Reference Dyes	A normalization of reaction due to non-PCR related fluctuations should be possible by using any calibrated dye.
	Preferably, no internal reference should be required. Option should exist to select no passive reference.
Running chemistries	Should be capable of running different chemistries using Taqman, Molecular beacon, SyBr green etc.
FRET	One channel should be dedicated for FRET experiments

Multiplexing	should have True 5 color multiplexing with use of five different fluorophores
Dynamic range	upto 10 orders must be supported by the system
Quantitative PCR Run Time	Standard cycling: Less than 2 hrs Fast cycling: Less than 40 minutes
Applications	Should support applications including absolute quantitation, relative quantitation, multiplex-PCR, allelic discrimination(SNP), melt curve analysis as well as pathogen detection and plus/minus assay using internal positive control.
Data Collection	Data collected in all 6 filters for all wells regardless of plate setup.
Data Analysis	Remote monitoring of results / e-mail connectivity should be supported.
Reproducibility	Acceptable documented reproducibility between runs and uniformity among the wells in the block.
Touchscreen	The system should be touchscreen enabled for standalone operations. However, the system should include a laptop or a desktop computer with analysis software for complex gene expression studies and graphical representation of data in multiple formats.
Software	Full version software for primer and probe design must be included in the supply. Software given should be RMDL compliant and should be capable of import and analyzing data from any real time PCR platform.
Computer	Branded compatible computer should be included.
Electrical Connections	Electrical Connections: Compatible with Indian voltage and current supply
License	The quoted system must have full license for PCR and Realtime PCR process. A copy of the license may be offered with the system.
Verification of Results	The system should be supplied with an ELISA plate reader to cross verify real time PCR results using alternative colorimetric assays.
Power pack with Horizontal electrophoresis	A power pack with a mini horizontal system for cross validation should be included.
Consumables	Consumables should be provided to demonstrate performance of machine in 8 (96 well) plates for experiments in triplicates.
Application Support	The vendor supplying the instrument should have own application support laboratory in India, preferably in Delhi / NCR for local & efficient after sales service-support.
Training	Wet lab training for one person from the user lab at the supplier firm should be provided.

Specifications for ELISA Plate Reader:-

- Wavelength range 400–750 nm
- Photometric range 0.0–3.5 OD
- Linearity $\leq 1.0\%$ from 0.0–2.0 OD; $\leq 2.0\%$ from 0.0–3.0 OD

- Accuracy $\pm 1.0\%$ or 0.010 from 0.000–3.000 OD at 490 nm

- Precision 1.0% or 0.005 OD from 0.0–2.0 OD; 1.5% from 2.0–3.0 OD

- Resolution 0.001 OD
- Filter wheel capacity 8
- Plate shaking 3 speeds: low, mid, high; duration: 0–999 sec

- Read time 6 sec at single wavelength, 10 sec at dual wavelengths

- Data output Onboard graphical thermal printer and USB2 interface with PC or Mac data stations

- Flexible configurations with ability to read flat-, U-, or V-bottom microplates or 8- or 12-well strip plates
- Automatic calibration before each reading
- Variable-speed plate-shaking capability
- Easy-access 8-position filter wheel with 4 standard filters
- Onboard data storage of protocols, standard curves, and graphs
- Self-diagnostic capabilities to detect lamp burnout at startup

Specifications for Power Pack

1. System should have following specifications
2. Volts 10-300V; Current 4-400mA; Power 75 W
3. Type of output -constant voltage
4. -constant current, constant power
5. 4 output terminals
6. Timer 1 Min -999 min
7. Pause & Resume function available
8. Option of automatic recovery
9. System should be Stackable
10. System failure error indication for no load, sudden load change, short circuit ,over voltage
11. Number of output Jacks:4 sets in parallel
12. LED display 3 Digit

Specifications for Consumables:

25 (96-well plates) with covers with first strand cDNA synthesis kit and SyBr green master mix for 2500 reactions.

The Committee Members

Prof. Saroj Mishra (Chairman)

Dr. Ritu Kulshreshtha

Dr. Shilpi Sharma

Dr. Preeti Srivastava