UNIVERSITY OF HEALTH SCIENCES LAHORE

Khayaban – e – Jamia Punjab
Lahore – 54600, Pakistan.
UAN: 111-33-33-66

Date: 06-07-2018

No. SARF/UHS/KSK/280

Pre-Bid Meeting Minutes regarding the Procurement of Laboratory Equipment for the Project "Strengthening of Academic & Research Facilities(SARF)" at Kala Shah Kaku..

A pre-bid meeting was held on 06-07-2018 at 10:30am in Video Conference Room of University of Heath Sciences, Lahore, to discuss the queries of bidders in Tender Document.

Following attended the meeting.

Staff from University of Health Sciences. Lahore

1. Dr. Muhammad Shahzad, Project Coordinator (Convener)
2. Dr. Allah Rakha, Chairman Tender Committee
3. Mr. Mujahid Hussain, Member Tender Committee
4. Dr. Shagufta Khaliq, HOD Human Genetics department
5. Prof. Shakila ZAman, HOD Public Health department
6. Prof. Nasir Shah, HOD Family Medicine department
7. Dr. Nadeem Afzal, HOD Immunology department
8. Madam Ruqia Begum, Nursing department
9. Dr. M. Imran, Microbiology department
10. Mr. Mazhar Iqbal, Sub Engineer
11. Mr. Ishtiaq Ahmad, Computer Operator

Bidder Participated in meeting:

1. M. Yasir Hussain, Scientific Technical Corporation
2. M.Riaz, S.U Enterprises
3. S. Haider Ali, H.A Shah Sons
4. Umar Saeed, Rays Technology
5. M. Nasir, Kamstec International
6. Khalid Bhatti, Medilaser
7. Rehan Chohan, Medinostic Healtcare
8. Yasir Sohaib, Prime Scientific Corporation
9. Waleed Bin Tariq, Chemical House
10. M. Bilal, Mod Scientific traders
11. M. Shahbaz, Vantage Technologies
12. M. Rafique, AMS (Pvt.) Ltd.
13. M. Touqeer, Latif Brothers
14. Aqil, AMS Candyical
15. M. Waqas, Scien Tech
16. H. Zahid, Muslim Trading
17. Omar Rana, Pakistan Hospital
18. Simon & Naveed Anjum, Qualitron Corporation

Following points discussed in meeting.

General Queries	Clarifications
1. 2% Bid Security in favour of?	Treasurer-UHS
2. Brand Name mentioned?	**BRAND NAME OF ANY EQUIPMENT IF MENTIONED ANYWHERE MAY BE IGNORED.**
3. Flow Cytometer **Immunology Department**	High sensitivity and resolution bench top sorter that can identify and isolate target cells • Laser excitations: Blue, Red and Violet • Six or more colors • Sort collection minimum two-way sorting in 1.5-, 2.0- and 5.0-mL tubes • Re-useable and removable100-µm nozzle that can be sonicated during operation • With an average of 10,000 events per second, a two-way sort of 5% target populations achieve a purity of 98% and a yield of >80% of Poisson's expected yield for both populations. • Automated setup, optimization, monitoring of droplet breakoff, sort streams and ready for sorting. • Automated clog detection, optical filter detection and sort tube protection system • Throughput rate upto 40,000 events per second, independent of the number of parameters • Droplet sorting up to 34,000 drops per second • Automated drop-delay determination using fluorescent bead technology. • Fixed and spatially separated lasers with the cuvette flow cell • Pulse measurement Height, area, width • Correlation of time to any parameter for kinetic experiments or other applications like immunophenotyping and GFP sorting. • Automatic recalculation of compensation when detector settings are adjusted. • Channel threshold for any single parameter from any laser • Fluorescence sensitivity FITC: Less than 100 (MESF-FITC) PE: Less than 50 (MESF-PE) • Forward and side scatter sensitivity enabling separation of 0.5-µm beads from noise. • Detection Channels: FSC,SSC,FITC,PE,APC,APC Cy-7, DAPI, Violet 786 • System having closed architecture with minimum user interference • Sample input 5.0-mL polystyrene or polypropylene tubes • Adjustable sample agitation and temperature through software • Autoclavable stainless steel sheath container, polypropylene waste container Data Management

	• Computer Business PC with at minimum: Intel® 2.8G CPU Quad Core™ i7, Microsoft® Windows based operating system • 23-inch LCD with a minimum 1920 x 1080 resolution,8 GB RAM Storage 500- GB hard drive • Color Laser printer • Compatible online UPS Others: • Safety standards UL 61010 (US) IEC 61010 and IEC 60825 (Europe) • Supplier should have minimum one same brand (any model) cell sorter installed in Pakistan. • Foreign application training for two persons.
4. ELISA **Immunology Department**	Elisa reader with 8 channel measuring filter wheel provided with 405, 450, 492, 550, 620, 690 nm filters. Latest LED technology base with 4 LED. Standalone system operated with separate software and both qualitative and quantitative analysis. Measuring range is 0.00 to 4.00 OD with 400-750 nm wavelength range. Measuring time with < 20 sec for both single and dual wavelength with the accuracy of <±1.5% and resolution of 0.001 OD. Reader must have 4 different shaking style. Reader must be CE-IVD & FDA 21 CFR part II compliant approved
5. Gel Documentation System **Immunology Department**	Automation Capabilities: Workflow selection automated: Application driven; user selected or recalled by a protocol 1. Workflow execution automated: Controlled by a protocol via application specific setup for image area, illumination source, filter, analysis, and reporting 2. Workflow reproducibility: 100% repeatability via recallable protocols; from image capture to quantitative analysis and reports 3. Autofocus (patent pending): Pre calibrated focus for any zoom setting or sample height 4. Image flat fielding: Dynamic; pre calibrated and optimized per application 5. Auto exposure: 2 user-defined modes (intense or faint bands) 6. Upgradable to ChemiDoc: Yes 7. Chemiluminescence: No 8. Fluorescence: Yes 9. Colorimetry/densitometry: Yes 10. Gel documentation: Yes

	11. In-gel DNA Protection from UV Yes 12. Hardware Specifications: 13. Maximum sample size: 28 x 36 cm 14. Maximum image area: 19.4 x 26 cm 15. Excitation source: Epi-white light and trans-UV (302 nm) are standard (optional 365 nm lamp available); optional trans-white conversion screen and XcitaBlue™ UV/blue conversion screen available 16. Illumination control: 3 modes (trans-UV, trans white, epi-white) 17. Detector: CCD 18. Image resolution: 4 megapixels (Scientific grade) 19. Pixel size (H x V): 4.65 x 4.65 µm 20. Filter holder: 3 positions (2 for filters, 1 without filter) 21. Emission filters: 1 included (standard), 3 optional 22. Dynamic range: >3.0 orders of magnitude 23. Pixel density (gray levels): 4,096 24. Dynamic flat fielding: Application specific, for all applications 25. Instrument size: (L x W x H) 36 x 60 x 96 cm 26. Instrument weight: 32 kg 27. Operating Ranges: 28. Operating voltage: 110/115/230 V AC nominal 29. Operating temperature: 10–28°C (21°C recommended) Operating humidity: <70% non-condensing
7.Digital Micro (analytical) Balance **Immunology Department**	• 0.0001g to 320 g
8.Top Loading Digital Balance **Immunology Department**	0.01g to 600g
9.Real Time PCR **Immunology Department**	• Peltier based Heating and cooling. • The system should be 96 well block and 384 well upon up gradation. • Sample Volume: 1-50uL. • Operating thermal range: 0-100 °C. • Does not require periodic calibration • Thermal accuracy: ±0.2 of programmed target at 90°C. • Thermal Uniformity: ±0.4 well-to-well within 10 sec of arrival at 90°C. • Optical Excitation Filters: 6 Filtered LEDs. • Optical Detection Filters: 6 filtered photodiodes. • Wavelength Range: 450-730 nm. • Built in computer: yes.

	• Stand-alone system: yes (Can be run without computer support). • Instruments' Sensitivity: Detects 1 copy of target sequence in human genomic DNA. • thermal gradient capable: yes. • Programmable thermal gradient Span: 1-24°C. • Multiplex Analysis: Up to 5 Targets per well. • Chemistries: Dye based, Probe based and FRET. • Maximum ramp rate, °C/sec: 5. • Average ramp rate, °C/sec: 3.3. **Specifications of Software:** 1. Single software, free for life and free upgradable when available, for running experiments and analysis of data. 2. Software must be able to be installed on multiple computer systems. 3. Software must not need to be connected to instrument for its functioning, viewing and analysis of date. 4. Post run data files must be transferable to other computers for analysis. 5. Software must have capability of modification while running. 6. Software must have capability of modification upon completion. 7. Software must be capable of calculating Ta of the specific primers. 8. Software must have capability of automatically writing protocols.
10.Next Generation Sequencer **Human Genetics & Molecular Biology Lab**	The instrument should be fully automated from Library preparation to sequencing analysis. Single System for Multiple Application such as HID The System should be able to perform the analysis of the DNA & RNA samples with sample volume with higher sensitivity & should work for FFPE DNA or RNA samples. The system should be able to process single or multiple samples without wastage of consumables. Provision of Ready to use panels along with flexibility of custom design panels. **Software for** base calling and alignment, Annotation of variants of interest with public or private databases and perform multi-sample comparisons. Preconfigured analysis workflows for single, paired, or multiple samples, The software should have Cloud or local server options.

	The instrument should be quoted along with all software's to perform complete bioinformatics analysis. The vendor should have foreign trained local bioinformatics specialist team The system should be quoted with ready to use panels & running consumables for at least 200 samples package.
11.Biological safety cabinet Class II **Pharmacology Lab**	HEPA filter, UV light, dimension; minimum External: Hight 60", Width 60", depth 30" Minimum Internal: 60" x 30" x 25" Usable work area should be greater than 8 sq.ft 99.9 % filtering efficiency for 0.3 micron particles Average inflow velocity >0.5 m/sec Downflow: >0.30 m/sec provision for vacuum pump and with UPS backup
12.GC / MS **Pharmacology Lab**	Triple Quadrupole quantam ultramass Column: Capillary column GC column dimensions: 45 × 44 × 60 cm (18 × 17 × 24 in) wt: 35 kg (77 lbs) Second GC column: 45 × 44 × 67 cm (18 × 17 × 26 in) wt:35 kg (77 lbs) APCI probe or higher – HSRM (High resolution precursor ion selectivity) + HESI Mass range option up to 3000 AMU Mass Spectrometer 44 × 40 × 89 cm (17.5 × 16 × 35 in) wt: 61 kg (135 lbs) With computer+ printer+ UPS
13.Chemistry analyser **Pharmacology Lab**	Reading Modes: Two; Cuvette & Flow Cell Interface: Rs-232 & Intelligent Software Memory: 1200 Results Thermal Printer: Built-in for Printout Light Source: 12v/20w Halogen Lamp, Life Span>2000 hours Standard Filter: 340nm, 405nm, 505nm, 546nm, 578nm, 620nm, 660nm & 700 nm Measurements: Kinetic measurement with linearity check Kinetic, with linearity check and sample slope blank Two point kinetic, with or without reagent blank End point, with or without reagent blank Bichromatic end point, with or without reagent blank End point, with sample blank and with or without reagent blank.

	Detector: (320-1000 nm) Band Width: ≤8nm Linearity Range: 0.000-3.000Abs Aspiration Volume: Minimum 500ul
14.Gel documentation system **Pharmacology Lab**	10 megapixel or more digital camera, 264 and 365 nm UV Transilluminator, high resolution 8" TFT screen along with ability to view protein immunoblots as well Chemiluminescence + Fluorescence+ Colorimetry/densitometry+
15.Gel electrophoresis apparatus with power supply **Pharmacology Lab**	Horizontal, buffer volume 800 ml to 1 L, Should be able to hold >25 wells. Separate power supply
16.Thermal cycler Real Time with UPS **Pharmacology Lab**	96 well plate, real time, temp range 4°C to 100°C with gradient application, Droplet Digital PCR system equipped With advanced System of absolute quantification of target DNA/RNA molecules and PCR plate sealer (heat sealing instrument, plate support block that holds 96-well and 384-well plates, sealing frame) easy-to-use, workflow with 96-sample throughput, Real time thermal cycler able to amplify and extracted Amplified products following PCR for downstream applications, such as sequencing or cloning.
17.Centrifuge machine **Pharmacology Lab**	For 50/15 ml tubes with speed upto 15000 rpm and with refrigeration. Should be supplied with multiple swtichable rotors, i.e, 1.5/2 ml rotor, microplate rotor Temperature control (-20 to 40 °C)
18.Autoclave **Pharmacology Lab**	Basic water steam autoclave, capacity 85 liter, Fully microprocessor control, automatic functioning, digital display
19.Digital ultralow temperature Freezer **Pharmacology Lab**	Freezing temperature and capacity: -84 °C & 600 L, -160 °C & 250 L, 1 each. Upright with double cabinet style door. Supplied with UPS + 2 year warranty.
20.Spectrophotometer (visible and UV Range) **Pharmacology Lab**	Double-beam spectrophotometer utilizing a double monochromator and a photomultiplier diode tube detector Wavelength Range: 190 nm – 1100 nm Noise ≤0.00020A at 0A at 260 and 500 nm ≤0.00030A at 1A at 260 and 500 nm ≤0.00040A at 2A at 260 and 500 nm Weight should be less than 10 kg

21.ELISA microplate washer **Pharmacology Lab**	96 well plate, shaking and soaking programmable in minutes and seconds upto 60 minutes Wash volume; 50 to 1000 ul. The unit should have a programmable LCD color display. Benchtop weight should be less than 10 kg. Precision; <3% CV: 300 µL/well. Residual volume should be less than 2 µl per well.
22.ELISA reader automated with UPS **Pharmacology Lab**	High speed (should be able to read 96 well plate in <15 secs) Multi wavelength and spectral scanning; Wavelength Range Absorbance: 200 - 1000nm. Fluorescence intensity: Excitation: 200 - 1000nm, Emission: 270 - 840nm Precision: CV < 0.5%, at 450nm (0 - 3Abs) Plate types: 6 - 1536 well plates End-point, kinetic, spectra, multipoint, nucleic acid and protein estimation and kinetic spectra measurement. With attached computer+printer and UPS
23.Digital ultralow temperature Freezer **Pharmacology Lab**	Freezing temperateure and capacity: -84 °C & 600 L, -160 °C & 250 L, 1 each. Upright with double cabinet style door. Supplied with UPS + 2 year warranty.
24.Gel documentation system **Pharmacology Lab**	10 megapixel or more digital camera, 264 and 365 nm UV Transilluminator, high resolution 8" TFT screen along with ability to view protein immunoblots as well Chemiluminescence + Fluorescence+ Colorimetry/densitometry+

Queries submitted by Bidders and their Clarifications are as under:

Queries of M/S Medinostic	Department	Clarifications
1.Mannequins (Mother & Child Health)	Public Health	See the Sr.No. for clarification. (only required academic charts & CDs)
2.Mannequins of human anatomy	Public Health	➢ Larynx with Trachea (Larynx and Trachea can be separated at the level of 6th Tracheal cartilage, Larynx separates into two parts medially. The right thyroid cartilage and thyro-thyroid muscle are removeable. Trachea shows its structure, bifurcations into main bronchi and divisions onto the lobular bronchi. Mounted on stand) ➢ Microanatomy of Eye (Model illustrates the microscopic anatomical structure of the retina with choroid and sclera. The left block-like, layered side of the model shows the complete structure of the retina including the supplying vascular layer and parts of the sclera

		from a light microscopic view. The right part of the eye model is a sectional enlargement. Model also shows the microscopic structure of the photoreceptors and the cells of the pigmented layer. Left part of eye about 850-times enlarged-right part about 3800-times enlarged. ➢ Physiology of Nerves model (Model display the basic structures of the human nervous system showing the following features. a. A typical neuron cell body. The edge of the cell body also shows the synapses of connected neurons. b. Myelin sheaths of the CNS showing the glial cells. c. Schwann Cells of the PNS with sectioned core. d. Motor End Plate Neuromuscular junction with striated muscle fiber is depicted. e. Synapse featuring the endoplasmic reticulum, mitochondria and the membranes of the synaptic gap.)
3.Mannequins	Family Medicine	BLS Training
4.AED trainer	Family Medicine	AED ultra Trainer(according to AHA guidelines)
5.Clinical Simulator	Family Medicine	1. One Mannequin with detachable male & female parts-Catherization 2. Motorized complete delivery system-Birthing Simulator
6.CPR Mannequin (Adult)	Nursing	Same as BOQ
7.CPR Mannequin (Child)	Nursing	Same as BOQ
8.Airway Head Mannequine (Adult)	Nursing	Same as BOQ
9.Spine Board+ Head Immobilizer	Nursing	Same as BOQ
10.ALS Manilkin with IV Arm/Hands	Nursing	Same as BOQ

Queries of M/S Qualitron Corporation	Department	Clarifications
1. Fluorescent Microscope	Human Genetics & Molecular Biology Lab	Cell imaging system with LCD display, high-resolution touch-screen color monitor for monochrome TIFF or PNG; 8-bit per channel TIFF, PNG, or JPG; time-lapse AVI, Time-lapse live-cell imaging: option for precise control of temperature, humidity, and gases for normoxic or hypoxic conditions required for wide range of biological studies

		under physiological conditions with an onstage incubator

Queries of M/S Latif Brothers(Instruments)	Department	Clarifications
1.Flourescent Microscope with camera	Immunology	Trinocular body with 10x eye piece, 5x, 10x, planar and 25x or 20 X, 40x and 100xphase objectives, green filter phase condenser, lenses suitable for bright and Fluorescent light microscopy. 50W mercury lamp
2.Binocular Microscope	Immunology	with 4X, 10x, 25x or 20X, 40x, 100x objectives with complete set of lenses
3.Inverted Microscope with camera	Human Genetics & Molecular Biology Lab	Adjustable-intensity LED light cube for immune-histochemistry analysis of cells. Contrast control, Objective 5-position; front-mounted control, Wide selection of high-quality, long working distance (LWD), and coverslip-corrected objectives ranging from 4x, 10X, 20X, 40X and 100x. Motorized XY scanning stage and condenser turret; vessel holders, and lockdown holders
4. Fluorescent Microscope	Human Genetics & Molecular Biology Lab	Cell imaging system with LCD display, high-resolution touch-screen color monitor for monochrome TIFF or PNG; 8-bit per channel TIFF, PNG, or JPG; time-lapse AVI, Time-lapse live-cell imaging: option for precise control of temperature, humidity, and gases for normoxic or hypoxic conditions required for wide range of biological studies under physiological conditions with an onstage incubator
5.Trinocular Microscope	Pharmacology	Digital camera 8 megapixel or above, with 4x,10x,40x and 100x objectives (antifungal) with LED light scource with life >25000 hours, GFP and DAPI filters and preferably with onboard image viewing/analyzing computer with UPS backup
6.Flourescent Microscope with camera	Microbiology	Trinocular body with 10x eye piece, 5x, 10x, planar and 25x or 20 X, 40x and 100xphase objectives, green filter phase condenser, lenses suitable for bright and Fluorescent light microscopy. 50W mercury lamp

Queries of M/S Prime Scientific Corporation	Department	Clarifications
1.HPLC	Pharmacology	Column: UPLC H-class BEH-C18 column (2.1x100 mm, particle size 1.7 um) Column temperature should be controllable Gradient solvent elution system Wavelength Monitoring range: 220 to 880 nm PDA detector MS: SQ detector mass spectrometer Ionization mode: ESI positive & ESI negative Flow rate adjustable Disolvation gas: liquid nitrogen in cylinder. m/z monitoring range: 200 to 2000 m/z Software: LC Solution or any compatible software With Computer + Printer + UPS

Project Coordinator (Convener)