



DEPARTMENT OF BIOTECHNOLOGY

ASSAM UNIVERSITY, SILCHAR

(A Central University constituted under the Act of Parliament of India in 1994)

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## NOTICE INVITING TENDERS

Assam University, Silchar, a Central University, invites SEALED BIDS in two bid system (technical and financial) from reputed manufacturers/ authorized distributors/ authorized firms with sound technical capabilities for supply, installation and commissioning of the following items to be procured under DBT sponsored project entitled “**Investigations into the potential of activating the AMP-activated kinase (AMPK) for the amelioration of betel nut induced carcinogenesis**” in the Department of Biotechnology, Assam University, Silchar (PI Dr. Yashmin Choudhury)

Serial no.	Description and specification of the item	Quantity required	Last date of submission of the sealed tender
1	<p><b>Fluorescence Microscope</b> <u>System should have following specifications:</u></p> <ul style="list-style-type: none"><li>• System should have four-color fluorescence and transmitted-light applications</li><li>• System should have five-position objective turret with front controls</li><li>• System should have on-board software, digital camera, precision optics, LCD display, and USB storage</li><li>• <b>Optics:</b> infinity-corrected optical system, RMS-threaded objectives with 45 mm parfocal distance</li><li>• <b>Illumination:</b> adjustable intensity LED (&gt;50,000-hour life per light cube)</li><li>• <b>Light Cubes:</b> DAPI (Ex 360 nm/Em 447 nm) to be included,</li><li>• <b>Contrast methods:</b> fluorescence and transmitted light (brightfield &amp; phase contrast)</li></ul>	One	

	<ul style="list-style-type: none"> <li>• <b>Objective turret:</b> 5-position, front-mounted control</li> <li>• <b>Condenser:</b> 3-position turret with brightfield and phase contrast annuli</li> <li>• <b>Condenser</b> working distance: 60 mm</li> <li>• <b>Objective lenses:</b> 10X LWD- 0.30NA/8.3WD 1, 20X LWD- 0.45NA/7.1WD 1, 40X LWD- 0.65NA/2.8WD 1 Included, 100X OIL, 1.28NA/0.21WD each, to be included</li> <li>• <b>Stage:</b> mechanical "glide" stage; X-Y axis fine-positioning controls: 28.3 mm (1.11") per rotation, 110 mm x 110 mm (4.3" x 4.3") range of motion; Z-axis focusing controls: 480 µm/rotation; interchangeable vessel holders</li> <li>• <b>Focus mechanism:</b> coaxial focus knobs with tension control</li> <li>• <b>Course focus:</b> 38mm/rev</li> <li>• <b>Fine focus:</b> 0.2mm/rev, precision 0.002 mm</li> <li>• <b>LCD display:</b> 15-inch color, 1024 x 768 pixels, adjustable tilt</li> <li>• <b>Camera:</b> color CCD, 2/3" 1360 x 1024 pixels, 1.4 Megapixels</li> <li>• <b>Image acquisition:</b> onboard microprocessor, built-in software for image acquisition via mouse control</li> <li>• <b>Captured images:</b> 16-bit color TIFF or PNG (12-bit dynamic range); 24-bit color TIFF, PNG, JPG or BMP; 1360 x 1024 pixels</li> <li>• <b>Output ports:</b> USB and DVI</li> <li>• <b>Power supply:</b> AC adapter; input 100-240 V, 50-60 Hz; output 12 VDC/4.15 A</li> <li>• <b>Dimensions:</b> operating height = 57.8 cm (22.75 in), storage/transport height = 32.4 cm (12.75 in), depth = 47.0 cm (18.5 in), width = 35.5 cm (14.0 in)</li> <li>• <b>Weight:</b> should not exceed 16 kg</li> <li>• <b>Microscope should be provided with a suitable online UPS</b></li> </ul>		
2	<p><b>Cooling centrifuge</b>  <u>System should have the following specifications:</u></p> <ul style="list-style-type: none"> <li>• System should have max RCF of 20,913 x g</li> <li>• System should have max RPM of 14000 RPM</li> <li>• Acceleration time: 10s</li> <li>• Deacceleration time : 10s</li> <li>• Soft ramp function for adjustable for rotor acceleration and braking slowly</li> <li>• Timer should be of 30 s –99 min with continuous run function continuous</li> <li>• Noise level should be &lt;55 dB</li> <li>• Wide temperature range from -9°C to + 40°C, which is modifiable during the run operation.</li> <li>• System should able to store 35 user define procedure.</li> <li>• System should able to switch display between rcf and rpm speed setting</li> <li>• Should have Short Spin Function</li> <li>• Should have At Set RPM" function - time count starts</li> </ul>	One	

	<p>after reaching the set rpm</p> <ul style="list-style-type: none"> <li>• Should have Fast Temp function - to start a temperature control run directly</li> <li>• Should have Fast Temp pro function - to start a temperature control run with defined start time</li> <li>• System should have ECO Shut off Function to reduce energy</li> <li>• Should have Built in condensation drain to eliminate water condensation</li> <li>• System should have automatic rotor recognition and imbalance detection for maximum operational safety</li> <li>• System should have Quick lock technology for quickly opening and closing the rotor lid</li> <li>• System should have standby cooling function to hold temperature when centrifuge is not in use.</li> <li>• System should have dynamic Compressor Control (DCC ) technology for optimized cooling performance</li> <li>• System should be supplied with swing out bucket rotor for 4 X 250 ml with adapters for 15 mL conical tubes: 8 x 4 = 32 nos. and adapters for 50 mL conical tubes : 4 x 4 = 16 nos. Max rpm. 4,200 and Max. rcf. 3,234 x g</li> <li>• System should be supplied with fixed angle rotor 6 X 85 ml with adapter for 15 ml conical tubes 6 nos, and adapter for 50 ml conical tubes 6nos , max speed of 11,000 rpm and Max RCF of 15,500 X g.</li> <li>• System should be supplied with aerosol tight 30 X 1.5/2.0 ml rotor with max RPM of 14000 and RCF of 20800 along with 0.2 ml adapter 30 nos <ul style="list-style-type: none"> <li>• Should have Power supply: 230 V / 50-60 Hz</li> <li>• Should have Dimension (WxDxH) : 64x55x34 cm</li> <li>• System should be supplied with 3 KVA online UPS with atleast 30 min backup</li> </ul> </li> </ul>		
3	<p><b>ELISA Reader</b>  <u>System should have the following specifications:</u></p> <ul style="list-style-type: none"> <li>• <b>Wavelength range:</b> 400–750 nm</li> <li>• <b>Photometric range:</b> 0.0–3.5 OD</li> <li>• <b>Linearity:</b> ≤1.0% from 0.0–2.0 OD; ≤2.0% from 0.0–3.0 OD</li> <li>• <b>Accuracy :</b> ±1.0% or 0.010 from 0.000–3.000 OD at 490 nm</li> <li>• <b>Precision:</b> 1.0% or 0.005 OD from 0.0–2.0 OD; 1.5% from 2.0–3.0 OD</li> <li>• <b>Resolution:</b> 0.001 OD</li> <li>• <b>Filter wheel capacity:</b> 8 Wheel with 6 preinstalled filters with 415, 450, 490, 595, 655, and 750 nm</li> <li>• <b>Plate shaking:</b> 3 speeds: low, mid, high; duration: 0–999 sec</li> <li>• <b>Read time:</b> 6 sec at single wavelength, 10 sec at dual wavelengths</li> <li>• <b>Data output:</b> Onboard graphical thermal printer and USB2 interface with PC or Mac data stations</li> <li>• <b>Data storage:</b> Calendar/clock function; 64 assay</li> </ul>	One	

	<p style="text-align: center;">Protocols</p> <ul style="list-style-type: none"> <li>• Flexible configurations with ability to read flat-, U-, or V-bottom microplates or 8- or 12-well strip plates</li> <li>• Automatic calibration before each reading</li> <li>• Variable-speed plate-shaking capability</li> <li>• Easy-access 8-position filter wheel with 6 standard filters</li> <li>• USB2 port for external computer control</li> <li>• Data and protocol presentation on LCD display</li> <li>• Onboard data storage of protocols, standard curves, and graphs</li> <li>• Self-diagnostic capabilities to detect lamp burnout at startup</li> <li>• Motorized door for plate loading</li> </ul> <p><b>Software specifications:</b></p> <ul style="list-style-type: none"> <li>• Microplate Manager for High-Throughput Analysis and Reporting</li> <li>• Running of 12 separate assays on the same plate</li> <li>• Optional automatic printing upon completion of measurement</li> <li>• Multiple-plate processing with automated data export</li> <li>• Custom reporting function that provides one-button screening for predefined assays, such as for TSE Comprehensive Curve-Fit Analyses</li> <li>• Linear, quadratic, cubic, Log-Log, Zero-Intercept Linear, Semi-Log, Logit Log, Point to Point or logistic (4-parameter, 5-parameter) fit types</li> <li>• Linear or logarithmic automatic axis scaling</li> <li>• External standard curves for multiple plates</li> <li>• Curve-fit graph overlay for comparison</li> <li>• Performance verification parameters should include: Accuracy, Precision, Linearity, Spectral blocking</li> <li>• <b>Complex Kinetic Analyses:</b> to include <ul style="list-style-type: none"> <li>- Choice of number of calculation points for Vmax</li> <li>- Simple velocity calculation</li> <li>- Negative or positive slope calculation</li> <li>- Absorbance limit selection</li> <li>- Kinetic correlation coefficient display and calculation for fit (r value)</li> <li>- Real-time data acquisition display and ability to zoom in on a well</li> <li>- Automatic scaling and real-time monitoring</li> </ul> </li> <li>• System should be supplied with a 1 KVA Online UPS and Mouse TNF alpha ELISA Kit</li> </ul>		
4	<p><b>-86°C freezer</b></p> <p><u>System should have the following specifications:</u></p> <ul style="list-style-type: none"> <li>• Vertical Freezer should have Microprocessor-</li> </ul>	One	

	<p>controlled temperature facility and alarms with non- volatile memory.</p> <ul style="list-style-type: none"> <li>• Capacity should have 400 Liters or above. Sample storage capacity should have minimum 24,000.00 (in 2" box)</li> <li>• Freezer should have 5 compartments and 4 adjustable-height shelves, with 5 insulated inner doors.</li> <li>• Freezer should have Vent Plunger to prevent vacuum formation, Keyed lock, polished 304L stainless steel interior, exterior : 18 gauge steel, 1.2 mm thick, powder coated, scratch and rust resistant</li> <li>• Freezer should have programmable temperature range from – 50°C to -86°C, in 1 °C increments, even at 32°C ambient temperature.</li> <li>• Minimum Power Consumption approx. 12.6 kWh/Day</li> <li>• Freezer should have the facility for Automatic Reset, Automatic Restart with Non-Volatile memory, programmed Restart.</li> <li>• Freezer should have Hermetically-sealed two-stage cascade refrigeration system with CFC, HCFC free refrigerants.</li> <li>• Internal Dimensions 126.5 cm x 55 cm x 57.5 cm (H x W x D), External : 191.5 cm x 80 cm x 85.2 cm (H x W x D).</li> <li>• Net Weight 235 Kg. and Shipping Weight 283 Kg.</li> <li>• Freezer should have Unique 4-digit Password to prevent unauthorized changes.</li> <li>• Freezer should have S.M.A.R.T. Plus™ Diagnostic Software to trace and solve system errors.</li> <li>• Freezer should have CE Certified and UL Certified</li> <li>• System should be supplied with 5KVA online UPS with at least 2 hours backup.</li> </ul>		
5	<p><b>Analytical balance</b></p> <p><u>System should have the following specifications:</u></p> <ul style="list-style-type: none"> <li>• <b>Maximum Capacity: 120 g</b></li> <li>• Maximum Capacity (Fine Range): 42 g</li> <li>• <b>Readability: 0.1 mg</b></li> <li>• <b>Readability (Fine Range): 0.01 mg</b></li> <li>• Repeatability (at nominal load): 0.08 mg (100 g)</li> <li>• Repeatability (fine range): 0.03 mg (40 g)</li> <li>• Repeatability (fine range at low load): 0.02 mg (20g)</li> <li>• Linearity deviation: 0.15 mg</li> <li>• Weighing pan dimensions (mm): 80 mm</li> <li>• System should have <b>fully Automatic Self Calibration &amp; adjustment with time &amp; Temperature Controlled</b></li> <li>• <b>System should have Smart Track facility To track how much of the entire weighing has been used.</b></li> <li>• System should have programmable keys Facility (atleast 3 Nos) for shortcut access to preferred applications</li> </ul>		

	<ul style="list-style-type: none"> <li>• System should have <b>Diagnostics Testing Facility - KEY PAD TEST &amp; REPEATABILITY TEST.</b></li> <li>• System should have HRT Weighing Cell ( High Resolution Technology) with two built in weights, for constant accuracy over the entire weighing range</li> <li>• System should have Egro Door Facility: Easy access door e.g The right door can be opened from the left side and vice versa.</li> </ul>		
6	<p><b>Vertical electrophoresis apparatus</b></p> <p><u>System should have the following specifications:</u></p> <ul style="list-style-type: none"> <li>• High throughput- Capable of running up to 4 mini gel (8 X 7 Cm) simultaneously.</li> <li>• Flexible- Capable of running hand cast as well as precast gel.</li> <li>• Running and casting module should be different</li> <li>• Interchangeable module- Should be capable of using blotting module to do western blotting.</li> <li>• System should be leak proof, tape free and easily assembled.</li> <li>• System should have Flap wing for leak proof assembly.</li> <li>• System should have permanently bonded spacer plates for leak proof, without agarose sealing &amp; taping casting of gels.</li> <li>• System should have casting frame with simple cam closure mechanism that gives precision alignment on any flat surface.</li> <li>• System should have side by side casting stands that allow access to both gels simultaneously.</li> <li>• System should have colored sample loading guides to prevent the skipping or repeated loading lanes.</li> <li>• System should have modular design can be used do western blotting by using the blotting module only.</li> <li>• System should able to run gels in 15-20 mins.</li> <li>• System should come with buffer dam.</li> <li>• Should be Supplied with 10% Stain free Fast Acrylamide Starter Kit</li> <li>• Should include Power Supply High Current with the following specifications:</li> </ul> <p><b>Specifications for Power Supply High Current :-</b></p> <ol style="list-style-type: none"> <li>a. Output specifications: 250 V, 3.0 A, 300W</li> <li>b. Output range (programmable): 5-250 V, fully adjustable in 1 V increments</li> <li>c. 0.01-3.0 A, fully adjustable in 0.01 A increments</li> <li>d. 1-300W, fully adjustable in 1W increments</li> <li>e. Type of output Constant voltage, current, or power with automatic crossover</li> </ol>	One	

	<p>f. Output terminals 4 pair recessed banana jacks in parallel</p> <p>g. Timer Up to 99 hr, 59 mm</p> <p>h. Should have Pause/resume function</p>		
7	<p><b>2-tier shaker with dimple mat</b></p> <p><u>System should have the following specifications:</u></p> <ul style="list-style-type: none"> <li>• Speed: 10-50 RPM</li> <li>• Timer: 99 hrs 99 mins</li> <li>• Platform Dimension: 30 L X 30 B (cm)</li> <li>• Overall Dimension: 30 W X 30 D X 20 H (cm)</li> <li>• Maximun load: 10 kg</li> <li>• Power: AC 320 V, 50 Hz</li> <li>• System should be of 2-tier</li> <li>• System should include a dimple mat to prevent tubes from rolling</li> </ul>	One	
8	<p><b>Tissue Homogenizer</b></p> <p><u>System should have the following specifications:</u></p> <ul style="list-style-type: none"> <li>• Powerful 125 watt motor</li> <li>• Light weight ergonomic design &gt;</li> <li>• includes 5 X 58 mm flat bottom probe</li> <li>• Processing Range: &lt; 200 µl to 100 ml</li> <li>• Speed: Variable from 500 to 35,000 rpm</li> <li>• Power Rating: 125 watt</li> <li>• Weight: 535 g (18.8 oz.)</li> <li>• Sound Level: &lt; 72 db</li> <li>• Warranty: 1 year motor warranty</li> </ul>	One	
9	<p><b>Refrigerator</b></p> <p><u>System should have the following specifications:</u></p> <ul style="list-style-type: none"> <li>• Capacity: 320 Litres</li> <li>• Door: Double</li> <li>• Defrosting system: Frost free</li> <li>• Shelf type: Toughened glass</li> <li>• System should have ice maker</li> <li>• System should have lighting</li> </ul>	One each	
10	<p><b>Micropipette set</b></p> <p><u>System should have the following specifications:</u></p> <ul style="list-style-type: none"> <li>• Adjustable volume of Micropipette with fully autoclavable</li> <li>• Micropipette should be Spring Loaded Tip Cone for connecting tips very tightly</li> <li>• Should have adjustment opening for adjusting pipettes to a specific liquid and volume.</li> <li>• Should have control Button with very low operating</li> </ul>	One	

	<p>force, Color indication for pipette volume.</p> <ul style="list-style-type: none"> <li>• Tip ejector with very low operating force, positioned for perfect ergonomics.</li> <li>• Volume Display: 4 Digits with magnifier.</li> <li>• To provide thermal, mechanical and chemical stability piston should manufactured from Fortron material</li> <li>• Very easy removable lower part for cleaning pipette</li> <li>• Volume should be supplied of 0.1-2.5 <math>\mu</math>l, 0.5-10 <math>\mu</math>L, 10-100 <math>\mu</math>L, 100-1000 <math>\mu</math>L along with appropriate tip box</li> </ul>		
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**Closing date and time for submission of tenders: 7<sup>th</sup> September 2017, 5:00 PM**

**Date and time for opening of tenders: 8<sup>th</sup> September 2017, 12<sup>th</sup> Noon**

**Venue for opening of tenders: Department of Biotechnology, Assam University, Silchar**

### **Terms and conditions**

1. The tenders complete in all respects should be addressed to **Dr. Yashmin Choudhury, PI, DBT U-EXCEL project, Department of Biotechnology, Assam University, Silchar-788011, Assam.**

2. The tenders for equipments must submit the bid(s) in two bid-system (Technical and Financial) packed in separate envelopes with clear mention of same.

3. Tenders by e-mail, Fax, Telex, Telegram will not be accepted. Tenders must be submitted in sealed envelope only clearly indicating **“TENDER FOR ITEMS FOR DBT-U-EXCEL Project/Biotechnology-2017/YC”**.

4. In case of any modifications in specifications/terms and conditions/ any clarification to the bid document, it will be hosted in the University website only and the bidders are requested to log to our website from time to time and no separate corrigendum will be issued in this regard.

5. The rate should be exclusive of taxes and applicable tax should be clearly indicated.

6. The rates should be quoted along with supporting documents of specifications, technical features, list of users and authorized dealership documents (if applicable). A valid and updated original equipment manufacturer (OEM) authorization form to be submitted to the tendering authority, if authorized distributors/suppliers/firms are participating.

7. Details of availability of after sale support will have to be furnished.

**8. The University is exempted from paying customs and excise duty.**

9. Propriety items should be quoted with sole manufacturer/ Dealership certificate. Without dealership or manufacturer’s certificate no bids will be accepted.



10. No advance payment will be made. However, if items are of foreign origin, advance payment can be made vide **LOC/FDD/Wire Transfer. Performance Bank Guarantee may be submitted as per rules covering warranty period.**

11. Items of foreign origin should have insurance up to installation site.

12. Items/ equipment should be delivered in good condition and installed at Assam University, Silchar.

13. If any item/equipment delivered in damaged condition, the equipment should be replaced with new one immediately.

14. In case of equipment of foreign origin, the Indian agent should submit one undertaking in nonjudicial stamp paper, stating that if any equipment is delivered in damaged conditions they will be liable to replace the same with a new one **(applicable only when order is placed)**.

15. **The University reserves the right to accept or reject any or all the bids after recoding proper justification for the same.**

Date: 18<sup>th</sup> August 2017

Sd/-  
Dr. Yashmin Choudhury (PI)  
Department of Biotechnology,  
Assam University, Silchar-  
788011, INDIA

**Copy to:**

1. Copy to secretary to VC , AUS for VC's kind information.
2. The Head, Department of Bioetchnology, AUS.
3. The Registrar, AUS
4. The Finance Officer, AUS.
5. Convener, Sponsored Research Project Cell, AUS.
7. File for record

## PROFORMA FOR SUBMISSION OF TECHNICAL BID (TB)

From

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 .....  
 .....  
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To,

Dr. Yashmin Choudhury,  
 PI, Department of Biotechnology,  
 Assam University, Silchar-788011, India

With reference to your advertisement dated.....published in the Newspaper and posted at Assam University Website, I/ We hereby submit the Technical bid for the.....required by you. I/ We confirm that I/ We are the owners/ authorized person to offer you the item as per the desired specifications.

### 1. Fluorescence Microscope

Serial no.	Technical Specification	Details to be filled by offerer
1.	Four-color fluorescence and transmitted-light applications (Y/N):	
2.	Five-position objective turret with front controls (Y/N):	
3.	On-board software, digital camera, precision optics, LCD display, and USB storage (Y/N):	
4.	<b>Optics:</b>	
5.	<b>Illumination</b> adjustable intensity LED (>50,000-hour life per light cube) (Y/N)	
6.	<b>Light Cubes:</b> DAPI (Ex 360 nm/Em 447 nm) included (Y/N)	
7.	<b>Contrast methods:</b>	
8.	<b>Objective turret:</b> 5-position, front-mounted control (Y/N)	
9.	<b>Condenser:</b>	
10.	<b>Objective lenses:</b> 10X LWD-0.30NA/8.3WD 1, 20X LWD-0.45NA/7.1WD 1, 40X LWD-	

	0.65NA/2.8WD 1, 100X OIL, 1.28NA/0.21WD each included (Y/N)	
11.	<b>Stage:</b> : mechanical "glide" stage; X-Y axis fine- positioning controls: 28.3 mm (1.11") per rotation, 110 mm x 110 mm (4.3" x 4.3") range of motion; Z-axis focusing controls: 480 µm/rotation; interchangeable vessel holders (Y/N)	
12.	<b>Focus mechanism:</b>	
13.	<b>Course focus:</b>	
14.	<b>Fine focus:</b>	
15.	<b>LCD display:</b>	
16.	<b>Camera:</b> color CCD, 2/3" 1360 x 1024 pixels, 1.4 Megapixels (Y/N)	
17.	<b>Image acquisition:</b> onboard microprocessor, built-in software for image acquisition via mouse control (Y/N)	
18.	<b>Captured images:</b> 16-bit color TIFF or PNG (12-bit dynamic range); 24-bit color TIFF, PNG, JPG or BMP; 1360 x 1024 pixels (Y/N)	
19.	<b>Output ports:</b>	
10.	<b>Power supply:</b> AC adapter; input 100-240 V, 50-60 Hz; output 12 VDC/4.15 A (Y/N)	
11.	<b>Dimensions (HXDXW):</b>	
12.	<b>Weight:</b>	
13.	Provided with a suitable online UPS (Y/N)	

## 2. Cooling centrifuge

Serial no.	Technical Specification	Details to be filled by offerer
1.	<b>RCF:</b>	
2.	<b>RPM:</b>	
3.	<b>Acceleration time:</b>	
4.	<b>Deacceleration time:</b>	
5.	Soft ramp function for adjustable for rotor acceleration and braking slowly (Y/N)	

6.	<b>Timer:</b>	
7.	<b>Noise:</b>	
8.	<b>Wide temperature range:</b>	
9.	How many user defined procedures is system able to store?	
10.	System able to switch display between rcf and rpm speed setting (Y/N)	
11.	Short Spin Function (Y/N)	
12.	Set RPM" function - time count starts after reaching the set rpm (Y/N)	
13.	Fast Temp function - to start a temperature control run directly (Y/N)	
14.	Fast Temp pro function - to start a temperature control run with defined start time (Y/N)	
15.	ECO Shut off Function to reduce energy (Y/N)	
16.	Built in condensation drain to eliminate water condensation (Y/N)	
17.	Automatic rotor recognition and imbalance detection for maximum operational safety (Y/N)	
18.	Quick lock technology for quickly opening and closing the rotor lid (Y/N)	
19.	Standby cooling function to hold temperature when centrifuge is not in use (Y/N)	
20.	Dynamic Compressor Control (DCC ) technology for optimized cooling performance (Y/N)	
21.	Swing out bucket rotor for 4 X 250 ml with adapters for 15 mL conical tubes: 8 x 4 = 32 nos. and adapters for 50 mL conical tubes: 4 x 4 = 16 nos. Max rpm. 4,200 and Max. rcf. 3,234 x g (Y/N)	
22.	Fixed angle rotor 6 X 85 ml with adapter for 15 ml conical	

	tubes 6 nos, and adapter for 50 ml conical tubes 6nos , max speed of 11,000 rpm and Max RCF of 15,500 X g (Y/N)	
23.	Aerosol tight 30 X 1.5/2.0 ml rotor with max RPM of 14000 and RCF of 20800 along with 0.2 ml adapter 30 nos (Y/N)	
24.	Power supply:	
25.	Dimension (WxDxH) :	
26.	3 KVA Online UPS with at least 30 min backup (Y/N)	

### 3. ELISA Reader

Serial no.	Technical Specification	Details to be filled by offerer
1.	<b>Wavelength range:</b> 400–750 nm (Y/N)	
2.	<b>Photometric range:</b>	
3.	<b>Linearity:</b> ≤1.0% from 0.0–2.0 OD; ≤2.0% from 0.0–3.0 OD (Y/N)	
4.	<b>Accuracy :</b> ±1.0% or 0.010 from 0.000–3.000 OD at 490 nm (Y/N)	
5.	<b>Precision:</b> 1.0% or 0.005 OD from 0.0–2.0 OD; 1.5% from 2.0–3.0 OD (Y/N)	
6.	<b>Resolution:</b> 0.001 OD	
7.	<b>Filter wheel capacity:</b> 8 Wheel with 6 preinstalled filters with 415, 450, 490, 595, 655, and 750 nm (Y/N)	
8.	<b>Plate shaking:</b>	
9.	<b>Read time:</b> 6 sec at single wavelength, 10 sec at dual wavelengths (Y/N)	
10.	<b>Data output:</b> Onboard graphical thermal printer and USB2 interface with PC or Mac data stations	
12.	<b>Data storage:</b>	
13.	Flexible configurations with ability to read flat-, U-, or V-bottom microplates or 8- or 12-well strip plates (Y/N)	

14.	Automatic calibration before each reading (Y/N)	
15.	Variable-speed plate-shaking capability (Y/N)	
16.	Easy-access 8-position filter wheel with 6 standard filters (Y/N)	
17.	USB2 port for external computer control (Y/N)	
18.	Data and protocol presentation on LCD display (Y/N)	
19.	Onboard data storage of protocols, standard curves, and graphs (Y/N)	
20.	Self-diagnostic capabilities to detect lamp burnout at startup (Y/N)	
21.	Motorized door for plate loading (Y/N)	
	<b>Software specifications:</b>	
22.	Microplate Manager for High-Throughput Analysis and Reporting (Y/N)	
23.	Running of 12 separate assays on the same plate (Y/N)	
24.	Optional automatic printing upon completion of measurement (Y/N)	
25.	Multiple-plate processing with automated data export (Y/N)	
26.	Custom reporting function that provides one-button screening for predefined assays, such as for TSE Comprehensive Curve-Fit Analyses (Y/N)	
27.	Linear, quadratic, cubic, Log-Log, Zero-Intercept Linear, Semi-Log, Logit Log, Point to	

	Point or logistic (4-parameter, 5-parameter) fit types (Y/N)	
28.	Linear or logarithmic automatic axis scaling (Y/N)	
29.	External standard curves for multiple plates (Y/N)	
30.	Curve-fit graph overlay for comparison (Y/N)	
31.	Performance verification parameters:	
32.	<p><b>Complex Kinetic Analyses:</b> includes</p> <ul style="list-style-type: none"> <li>a. Choice of number of calculation points for Vmax (Y/N)</li> <li>b. Simple velocity calculation (Y/N)</li> <li>c. Negative or positive slope calculation (Y/N)</li> <li>d. Absorbance limit selection (Y/N)</li> <li>e. Kinetic correlation coefficient display and calculation for fit (r value) (Y/N)</li> <li>f. Real-time data acquisition display and ability to zoom in on a well (Y/N)</li> <li>g. Automatic scaling and real-time monitoring (Y/N)</li> </ul>	
33.	1 KVA Online UPS (Y/N)	
34.	Mouse TNF alpha ELISA Kit (Y/N)	

#### 4. -86° Freezer

Serial no.	Technical Specification	Details to be filled by offerer
1.	Freezer is Vertical or Horizontal?	
2.	Microprocessor-controlled temperature facility and alarms with non-volatile memory (Y/N)	
3.	<b>Capacity (in Liters):</b>	
4.	<b>Sample storage capacity:</b>	
5.	Freezer has 5 compartments	

	and 4 adjustable-height shelves, with 5 insulated inner doors (Y/N)	
6.	Freezer has Vent Plunger to prevent vacuum formation, Keyed lock, polished 304L stainless steel interior, exterior : 18 gauge steel, 1.2 mm thick, powder coated, scratch and rust resistant (Y/N)	
7.	Programmable temperature range from – 50°C to -86°C, in 1°C increments, even at 32°C ambient temperature (Y/N)	
8.	Minimum Power Consumption:	
9.	Facility for Automatic Reset, Automatic Restart with Non-Volatile memory, programmed Restart (Y/N)	
10.	Hermetically-sealed two-stage cascade refrigeration system with CFC, HCFC free refrigerants (Y/N)	
12.	Internal Dimensions (H x W x D): External Dimensions (H x W x D):	
13.	Net Weight:	
14.	Unique 4-digit Password to prevent unauthorized changes (Y/N)	
15.	S.M.A.R.T. Plus™ Diagnostic Software to trace and solve system errors (Y/N)	
16.	CE Certified and UL Certified (Y/N)	
17.	5KVA Online UPS with at least 2 hours backup (Y/N)	

#### 5. Analytical Balance

Serial no.	Technical Specification	Details to be filled by offerer
1.	Maximum Capacity:	
2.	Maximum Capacity (Fine Range):	
3.	Readability:	
4.	Readability (Fine Range):	
5.	Repeatability (at nominal	



	load):	
6.	Repeatability (fine range):	
7.	Repeatability (fine range at low load):	
8.	Linearity deviation:	
9.	Weighing pan dimensions (mm):	
10.	Fully Automatic Self Calibration & adjustment with time & Temperature Control (Y/N)	
11.	Smart Track facility To track how much of the entire weighing has been used (Y/N)	
12.	What is the number of programmable keys facility for shortcut access to preferred applications?	
13.	<b>Diagnostics Testing Facility - KEY PAD TEST &amp; REPEATABILITY TEST (Y/N)</b>	
14.	HRT Weighing Cell ( High Resultion Technology) with two built in weights, for constant accuracy over the entire weighing range (Y/N)	
15.	Egro Door Facility: Easy access door e.g The right door can be opened from the left side and vice versa (Y/N)	

#### 6. Vertical Electrophoresis Apparatus

Serial no.	Technical Specification	Details to be filled by offerer
1.	Capable of running up to 4 mini gel (8 X 7 Cm) simultaneously (Y/N)	
2.	Flexible- Capable of running hand cast as well as precast gel (Y/N)	
3.	Running and casting modules are different (Y/N)	
4.	Interchangeable module: capable of using blotting module to do western blotting (Y/N)	
5.	Leak proof, tape free and easily assembled (Y/N)	

6.	Has Flap wing for leak proof assembly (Y/N)	
7.	Has permanently bonded spacer plates for leak proof, without agarose sealing & taping casting of gels (Y/N)	
8.	Has casting frame with simple cam closure mechanism that gives precision alignment on any flat surface (Y/N)	
9.	Side by side casting stands that allow access to both gels simultaneously (Y/N)	
10.	Colored sample loading guides to prevent the skipping or repeated loading lanes (Y/N)	
11.	Time for running gels (mins):	
12.	Buffer dam (Y/N)	
13.	10% Stain free Fast Acrylamide Starter Kit (Y/N)	
14.	<p><b>Power Supply High Current with the following specifications:</b></p> <ul style="list-style-type: none"> <li>a. Output specifications: 250 V, 3.0 A, 300W (Y/N)</li> <li>b. Output range (programmable): 5-250 V, fully adjustable in 1 V increments(Y/N)</li> <li>c. 0.01-3.0 A, fully adjustable in 0.01 A increments (Y/N)</li> <li>d. 1-300W, fully adjustable in 1W increments (Y/N)</li> <li>e. Type of output Constant voltage, current, or power with automatic crossover (Y/N)</li> <li>f. Output terminals:</li> <li>g. Timer:</li> <li>h. Pause/resume function (Y/N)</li> </ul>	

**7. 2 tier shaker with dimple mat**

<b>Serial no.</b>	<b>Technical Specification</b>	<b>Details to be filled by offerer</b>
1.	Speed:	
2.	Timer:	
3.	Platform Dimension (LXB):	
4.	Overall Dimension (WX DX H):	
5.	Maximum load: 10 kg (Y/N)	
6.	Power:	
7.	2-tier (Y/N)	
8.	Includes a dimple mat to prevent tubes from rolling (Y/N)	

**8. Tissue Homogenizer**

<b>Serial no.</b>	<b>Technical Specification</b>	<b>Details to be filled by offerer</b>
1.	Powerful 125 watt motor (Y/N)	
2.	Light weight ergonomic design (Y/N)	
3.	includes 5 X 58 mm flat bottom probe (Y/N)	
4.	Processing Range:	
5.	Speed:	
6.	Power Rating:	
7.	Weight:	
8.	Sound Level: < 72 db (Y/N)	
9.	1 year motor warranty (Y/N)	

**9. Refrigerator**

<b>Serial No.</b>	<b>Technical Specification</b>	<b>Details to be filled by offerer</b>
1.	Capacity:	
2.	Door: Double (Y/N)	
3.	Defrosting system: Frost free (Y/N)	
4.	Shelf type: Toughened glass (Y/N)	

5.	Ice maker (Y/N)	
6.	Lighting:	

**1. Micropipette Set**

Serial no.	Technical Specification	Details to be filled by offerer
1.	Adjustable volume and fully autoclavable Micropipettes (Y/N)	
2.	Micropipettes have Spring Loaded Tip Cone for connecting tips very tightly (Y/N)	
3.	Micropipettes have adjustment opening for adjusting pipettes to a specific liquid and volume (Y/N)	
4.	Control Button with very low operating force, Color indication for pipette volume (Y/N)	
5.	Tip ejector with very low operating force, positioned for perfect ergonomics (Y/N)	
6.	Volume Display: 4 Digits with magnifier (Y/N)	
7.	Piston manufactured from Fortron material to provide thermal, mechanical and chemical stability (Y/N)	
8.	Very easy removable lower part for cleaning pipette (Y/N)	
9.	Volume supplied of 0.1-2.5 $\mu$ l, 0.5-10 $\mu$ L, 10-100 $\mu$ L, 100-1000 $\mu$ L along with appropriate tip box (Y/N)	

**Date:**

**(Signature of the Offerer)**

**OFFICE SEAL**

**(This format shall be sent in a separate sealed cover super scribing “TECHNICAL BID FOR EQUIPMENT FOR DBT-U-EXCEL Project/Biotechnology-2017/YC”)  
PROFORMA FOR SUBMISSION OF FINANCIAL BID (FB)**

From

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 .....  
 .....  
 .....

To,

Dr. Yashmin Choudhury,  
 PI, Department of Biotechnology,  
 Assam University, Silchar-788011, India

Having read and understood the Technical bid, I/ We are furnishing the desired information and submitting our Technical Bid duly signed by our Authorized person. Now we are hereby submitting in separate sealed cover) our Financial Bid for the purchase of equipments.

<b>Serial No.</b>	<b>Specification of Items</b>	<b>Details to be filled by offerer</b>
<b>1.</b>	Fluorescence Microscope/ Cooling centrifuge/ -86°C Freezer/ ELISA Reader/Analytical Balance/ Vertical electrophoresis apparatus/Tissue homogenizer/ 2-tier shaker with dimple mat/ Micropipette set/ refrigerator	Price in INR/ USD/ Other currency whichever is applicable (Please mention separately the price of each item, accessories, insurance, etc. under separate heads)
<b>2.</b>	Applicable taxes	To be included
<b>3.</b>	FOR Silchar	To be included
<b>4.</b>	Special Offer/ Discount	To be included
<b>5.</b>	Grand Total	Price in INR/ USD/ Other currency whichever is applicable
<b>6.</b>	Terms and conditions	As applicable
<b>7.</b>	Warranty and after sales service	As applicable
<b>8.</b>	Banking details	To be included

**Date:**

**(Signature of the Offerer)**

**OFFICE SEAL**

**(This format shall be sent in a separate sealed cover super scribing “FINANCIAL BID FOR EQUIPMENT FOR DBT-U-EXCEL Project/Biotechnology-2017/YC”)**