Sealed quotations are invited from competent vendors for the supply of following instruments with the following specifications at Akhil Bharatiya Grameen Vikas Sanstha, Greater Noida for the following DBT sponsored project "Surface engineered Silver (Ag) nano particles and Peptide conjugate for angiogenesis based animal wound management" sanctioned to Dr. Yearla Srinivasa Rao

Lyophilizer (Freeze Dryer) with Vacuum pump

Technical Specification:

Performance (drying rate): at least 2 Kg/24 hour

Ice Capacity: at least 2.5 Kg

Ice Condenser Capacity: at least 3.5Liters

Ice Condenser Temperature: minimum -55 deg C

Compressor power: more than 0.5 HP

Dimension of the Base unit (in mm): should not exceed 350 x 350 x 500 (W x H x D)

Electrical Connection: 230V, 50 Hz

The instrument should have a vacuum sensor.

The instrument should have acrylic chamber of 240mm diameter or more.

The instrument should have Electromagnetic pressure control valve or equivalent to increase drying rate

The instrument should be equipped with provision to lyophilize/freeze dry contents of glass vials (10 mL capacity, 25 mm Diameter x 50 mm Height) and then seal it under vacuum.

The instrument should be able connect up to 8 flasks and should have suitable valves to connect to round bottom flasks from 100 ml to 2 litres.

Vacuum pump specifications:

Vacuum pump should be chemical resistant. It should be with pumping speed of 5.9 m^3/h or better.

The items such as vacuum hose, various filters for vacuum pump, drying chamber, rubber valves, etc which is necessary for the smooth operation of the instrument should be included.

Accessories:

In addition to above specifications, vacuum pump oil (minimum 20 litres), additional vacuum sensor, injection vials of suitable size and filters should be provided with the instrument.

Warranty - 03 Years.

Deep Freezer

Technical Specification:

Sr. No	Description	
	Parameter	**Requirement**
1	Capacity:	400 -500 L
2	Cabinet type:	Upright
	Defrost Mode:	Manual
4	Temperature range (°C):	-20 to -40°C
5	Controller:	Microprocessor
6	Display type:	LED
7	Functions: High/ low temperature; remote alarm; power failure; Sensor error, low battery:	Required
8	Accessories: Caster, Foot, Test hole, Drawers (atleast 8)	Required
9	Ability to work with a CO_2 and LN_2 backup system	Required
10	Certification	CE Certification for provided model needed
11	Warranty	1 year

Cooling centrifuge

Technical specification:

1. Centrifuge should be operational at a temperature range of -9 to +40 deg C along with short spin key, fast cooling & stand-by cooling option, 10 acceleration & deceleration rates with at-least 35 program memory.

2. Provision to set speed, radial centrifugal force (RCF), and radius correction values (preferably keypad based)as per the need.

3. Short spin key with selectable rotational speed. Ability to spin at 12000 rpm and 18000-20,000g.

4. Inbuilt ability for correct rotor recognition and Imbalance sensor/alarm.

5. The instrument should have an option of manual lid opening in case of power failure so that samples can be retrieved easily with tool from front or side of the machine.

6. It should have built-in condensation drain to eliminate excess water to prevent corrosion.

7. Rotors to be supplied with machine: a) Swing Bucket Rotor-RCF 3200xg/3900 rpm with High capacity swing out rotors (total working capacity 4x250ml or more): 250 ml centrifuge tubes–4 no's and adaptors should be provided to centrifuge b) Fixed angle rotor for 8x50ml at 12000rpm or more c) 18,000xg or more, along with adaptor for 24x1.5ml falcon tube.

8. All rotors, buckets should be metallic. Rotors, caps, buckets and adaptors must be autoclavable.

9. It should have CFC free refrigerant with an ozone depletion potential (ODP) of zero.

10. Power requirements230V, 50 HZ, if stabilizer is required it must come with instrument.

11. Warranty - 03 Years.

Hydrothermal reaction vessels

Technical specifications:

1. Capacity : 50 mL, 100 mL, 250 mL

2. Maximum operating temperature: 240°C ± 10°C

3. Safe temperature for long term operation : 200°C ± 10°C

4. Working pressure : ≥ 3 MPa or 30 Bar

5. Typical heating and cooling rate : ≤ 5°C/min

6. Material of outer shell : High-quality nonmagnetic 316 stainless steel

7. Material of inner vessel/lining: Polytetrafluroroethylene (PTFE) or Teflon

8. Design: Thread locking with smooth handling

9. Tightening of the SS outer shell cap : Two level tightening mechanism of the cap ensuring proper fixing of the teflon vessel without leakage of solvent vapour i) Primary cap: screw type thread tightening of the main cap, ensuring to withstand above mentioned working pressure with standard safety factor. ii) Secondary cap: for extra tightening to avoid leakage from reactor vessel.