



DIVISION OF BIOCHEMISTRY
ICAR- INDIAN AGRICULTURAL RESEARCH INSTITUTE
Pusa, New Delhi - 110 012



F. No. ICAR-IARI-BIOCHEM-Equipment-Purchase/24-25

Dated: 10/01/2025

NOTICE FOR E-PROCUREMENT THROUGH GeM

Online GeM e-bid are invited from reputed manufacturers/suppliers/authorized dealers two bid (technical and financial) for purchase of scientific equipment **2D Proteomics Systems and accessories** for at Agricultural Innovation Centre, ICAR-IARI, New Delhi on behalf of Director ICAR-Indian Agricultural Research Institute New Delhi. Please visit www.iari.res.in for details rules and regulations and login www.gem.gov.in for online e-bidding :-

Details of feM Bid is/are as mentioned below:

Tender No.	GEM/2025/B/5801476
Bid submission start date	09/01/2025
Last date & time for submission of bid	31/01/2025 10:00:00
Bid opening date and time	31/01/2025 10:30:00
Address for communication if any	Asstt. Admn. Officer, Division of Bio-Chemistry, Room No.325, IInd Floor ICAR-IARI, New Delhi

Sd/-
Asstt. Admn. Officer,
Division of Bio-Chemistry,
ICAR-IARI, New Delhi-110012

DIVISION OF BIOCHEMISTRY

Technical Specifications for the Purchase of 2-D Proteomics System and Accessories

1st DIMENSION ISOELECTRIC FOCUSING SYSTEM

1. System should include Individual Lane Control for running different samples, pH Gradients and focusing protocols in a single run.
2. System should be able to run minimum 12 strips simultaneously.
3. System should have touch screen User Interface for easy creating and editing protocols and setting up the program rapidly.
4. System should include dedicated site for online data interpretation for Graphing data, Comparing lanes and generating reports.
5. System should include USB Port to export data for storage and analysis.
6. System should include run mode flexibility- to run IPG strips gel Side Up, Gel Side Down and with cup loading configuration.
7. System should have voltage 0–10,000 V, 1 V increments (50-10000V).
8. Current range should be 0–100 μ A per lane, 1 μ A intervals.
9. Power range of 0–1 W per lane.
10. System should have peltier based cooling platform.
11. Temperature range should be 10–25°C \pm 1.0°C @ max ambient 23°C 18–25°C \pm 1.0°C @ max ambient 31°C.
12. Focusing trays should be made of polycarbonate for contaminant free process.
13. System should accommodate IPG strip of length 7, 11, 13, 17, 18, and 24 cm.
14. System should have display QVGA resolution (320 x 240) touch screen or mouse control.
15. System should have ramping Step, linear, gradual, and hold voltage ramping for each focusing step. Hold mode as a final step to prevent diffusion when IEF is complete.
16. System should have 2GB capacity for storing protocols.
17. Data collection should be in .dat format.
18. System should have following regulatory compliances:
 - Safety EN 61010-1:2001, IEC 61010-1:2001 Use NRTL to test for compliance to UL61010-1:2004 and CAN/CSA C22.2 No. 61010-1-04
 - EMC EN61326 (1997 w/A1:98) Class A FCC Code of Federal Regulations, Title 47, Part 15, Subpart B, Class A
 - Other approvals RoHS/WEEE Research Materials to determine level of EFUP.
19. Instrument should be supplied with positive and negative electrode assemblies, 7 cm, 11 cm, and 17 cm focusing trays with IPG strip retainers.

20. Instrument should be supplied with 4 pairs of forceps, 4 packs of electrode wicks for gel-side down and gel-side up applications, mineral oil (4 bottles), 2 cleaning brushes, cleaning concentrate, 2 USB flash drives, 3 styluses.
21. Instrument should be supplied with all necessary consumables require to run at least 200 samples.

2nd DIMENSION (SDS-POLYACRYLAMIDE GEL ELECTROPHORESIS)

A) Tetra Mini SDS PAGE Apparatus (7cm IPG strip)

22. The system should be capable of accommodating & simultaneously running 1 to 4 mini gels in less than an hour.
23. The system should be easy to assemble, include a casting stand and glass plates with permanently bonded gel spacers for leak proof casting of gels and avoid messy agarose sealing & tape casting of gels.
24. The system should be capable of accommodating interchangeable modules for tank transfer, 2-D electrophoresis & electro-elution.
25. The system should come with molded, one-piece buffer dam when running (only) one or three gels.
26. The system should come with color coded electrodes to prevent accidental reversal of polarity.
27. The system should be capable of accommodating 5 well, 9 well, 10 well, 15 well & Prep/2D combs for sample volumes ranging from 20-150 μ L.
28. System should be supplied with a starter kit of acrylamide solution with dissolved fluorescence dye such that the PAGE gel after running does not require any staining for visualizing proteins in gel.
29. The system should be capable of accommodating both hand cast & precast gels of the below said dimensions :
 - Gel size (W x L) : Approximate Precast 8.6 x 6.8 cm , handcast 8.3 x 7.3 cm

B). Midi Vertical Electrophoresis System

30. Gel Capacity: 1 to 4 gels.
31. Runs gels of 16X16cm size to perform SDS-PAGE and the second dimension 2-D using IPG Strips, upgradeable to accommodate 16 X20cm gels.
32. The casting stand should have single-screw clamps that exert even pressure along the entire length of the glass plates, providing leak-proof seal without grease or agarose plugs.
33. Central cooling core can be connected to tap water or a cooled recirculating bath, or filled with coolant, providing smile-free patterns with as little as 1.5 L of buffer.

C). Power Supply:

34. Should have four slot Power pack with LCD display.
35. Should have volt: 10-500V 1 V steps, Current: 0.01-2.5 A with 1mA step, Power: 1-500W.

36. Should have constant voltage, constant current or constant power.
37. Should have timer: 1min-99hr59min.
38. Should have volt-hour control 99000.
39. Pause /resume function.
40. Should have safety feature no load, load change, overload/short circuit detection.
41. Should have automatic recovery after power failure.
42. Should be programmable 9 methods with 9 steps.
43. Should have EN61010 safety.

SOFTWARE FOR 2D IMAGE ANALYSIS

44. Easy-to-use wizard-directed user interface.
45. Automated spot detection and matching.
46. Sophisticated quantitation.
47. Statistical analysis tools.
48. Flexible visualization tools.
49. Sample classification for comparative analysis.
50. Gaussian modeling based software is preferred.
51. Sophisticated algorithms for Automatic Spot Detection & Quantification.
52. Sypro ruby filter for auto recognition and removal of background speckles.
53. Simultaneous analysis of minimum fifteen gels and can be upgradable to unlimited images.

54. User adjustable significance level and Boolean analysis by using different set and subset.
55. Can be upgradable for multiplex gel normalization with normalization table feature.
56. Gel land marking and automatic spot matching.
57. Sophisticated variable background removal to quantitate low abundance protein.
58. Can Export XML data and JPEG file format

Gel Imaging System

59. System should be compact, have minimum footprint, table top type.
60. System should have detector of at least 6.0 MP CMOS having pixel size of 2.4 μm x 2.4 μm and pixel density (grey levels) of 65.535.
61. System should have dynamic range of >3.5 orders of magnitude.
62. Imaging system should have Automatic capabilities with Application driven, user selected or recalled by a protocol.
63. System should have Smart Tray Technology: System should automatically recognize the application-specific tray and adjust imaging parameters and software options accordingly.
64. System should have auto-focus: Pre-calibrated focus for any zoom setting.
65. System should have auto-exposure : Two auto-exposure algorithms (rapid or optimal)
66. Should have 100 % repeatability via recallable protocols.
67. System should have Stain free tray technology for the minimal use of dyes with validated/proven total protein normalization consumables from same manufacturer.
68. System should have pre-calibrated focus for any zoom settings & sample height.

69. Should have appropriate flat fielding correction automatically & consistently applied to image data for every application.
70. System should have Excitation source : Trans-UVB (standard), Epi-white (standard), Trans-white (optional), Trans-blue (optional)
71. Emission filter: 535–645 nm (standard)
72. Versatile system to support wide range of applications like- Fluorescent dye like Sybr green, Sybr safe, 2-D, 1-D, Dot Blotting, Nucleic acid detection , Quantization, stain free imaging.
73. Maximum image area: 21 x 14 cm (W x H)
74. System should come with white light conversion screen.
75. System must have manual in/out sliding door facility design for easily accessible during gel excision experiments.
76. System should have auto-exposure: Two auto-exposure algorithms (rapid or optimal).
77. System should have touch-screen capable Display resolution 1,024 x 768 pixels 8-10" display or more.
78. System should have reproducibly position or center the sample on the image platen by using gel alignment templates.
79. System should have comprehensive automated quantitative analysis of proteins & DNA samples in seconds.
80. System should have Intuitive and well organized (efficient) selection of workflows based on applications.
81. System should have 3D viewer, Absolute and Relative quantization.
82. Software should be multi user for multiple PC for use of multiple users and license free with life time free upgrades.
83. System should have auto exposure – 2 user defined modes (intense or faint bands).
84. Software should be single for imaging and analysis.
85. Compatible desktop/laptop and printer should be provided with the system.

Compulsory Accessories and conditions:

86. 2 KVA online UPS with 1 hr backup.
87. Minimum 1 year warranty for all the instruments and accessories.
88. On site wet demonstration/training.
89. Technical support for 01 year.