

**Department of Zoology
University of Delhi
Delhi-110007**

**Tender for
“High-content automated confocal imaging, screening and analysis system”**

Bid No.:GEM/2026/B/7894919

There is a requirement for a **High-content automated confocal imaging, screening and analysis system** in **Laboratory No. 101, Molecular Oncology Laboratory, Department of Zoology, University of Delhi, Delhi-110007**. The purpose of this requirement is to enable advanced, accurate, and high-throughput imaging of cells grown in both 2D and 3D culture systems.

The major applications for which the system is required are enlisted below:

- Confocal imaging of live suspension 2D/3D cell cultures
- Time-lapse imaging of 3D spheroid cultures for drug testing
- Coordinate-based mapping of regions of interest (live 3D spheroids/organoids) and their traceability in due time course
- Simultaneous multi-fluorescence imaging during single-plate scans
- Z-stack acquisition for improved mean focal accuracy in spheroid imaging
- Automated counting of 2D cells and 3D spheroids per well by Artificial Intelligence (AI)/ Machine learning (ML)/ Deep learning
- Accurate discrimination of 3D structures from background noise in heterogeneous cultures such as PBMCs
- Internal and external data storage capabilities with 50% redundancy for effective storage of at least 1PB.
- The system should comprise two dedicated units, one for acquisition and one for analysis, each configured with a minimum of 2TB RAM and integrated with a compatible high-performance GPU for efficient data processing.
- Advanced image analysis software enabling image stitching, fragmentation analysis, cell/spheroid counting, co-localization, fluorescence intensity quantification, channel merging, and 3D spheroid-specific metrics such as cell number per spheroid, intensity, volume, surface area, size, perimeter, diameter, sphericity, circularity, and length
- Additional applications: Thick tissue Imaging, Whole Organism Imaging, Live cell Imaging (like Monitor cell growth, cell death, cell differentiation, and migration; viral or bacterial invasion, cancer metastasis, chemotaxis, drug toxicity, or translocation), RNA Interference, Stem cell studies & Homogeneous Binding Assays, receptor internalization assay image segmentation, background correction, spot detection, colocalization, dot measurements in nuclei and cytoplasm.

Interested firms are encouraged to participate and can look into detailed tender document through GeM portal.