

## **Annexure-A**

### **Technical Specifications For Spectral Laser Scanning Confocal Microscope**

The system should be an state-of- the-art completely Spectral Confocal and have Filter free detection technology for fixed & Live Cell imaging, consisting of the following items:

#### **Inverted Fluorescence Research Microscope:**

Inverted Fluorescence Microscope having programmable motorized X-Y scanning stage with Universal sample holders for slides, 35/60 mm Petri dish, labtek or similar chambers.

It should have FOV 22mm and Plan Apo-chromatic objectives of Magnifications 10x, 20x Multi Immersion, 40X, 63X (1.4NA) Oil and 63X water.

12V 100W halogen illumination for transmitted light, 120W /130 W metal halide illumination (life time approx 2000hrs) for Fluorescence.

Automated DIC for all objectives and Fluorescent band pass filters for DAPI, GFP, YFP, TRITC/ Rhodamine.

The Piezo Z-stage for fast XZ and XYZ scanning with z step size of 1nm.

Suitable and completely imported anti-vibration table.

Onstage CO2 incubator for live cell imaging, ( upto 72 hrs), which can hold petri plate & multiwell plate. It should be fully automated and confocal software controlled.

High resolution cooled monochrome camera having 1.45 million net effective pixel resolutions with cooling of -20 degree below ambient.

#### **Confocal Scan Head and detection system:**

Point scanning confocal Microscope with high transmission efficiency optics and filter free confocal detection.

Scan head with prism based spectral imaging capability in confocal mode.

Computer controlled continuously variable single pin hole system.

System should possess high efficient dichroic beam splitter for lasers with recycled grating/Prism/Hybrid photon counting and Spectral PMT .

System should be able to image cross talk free real time spectral imaging without any algorithm.

System should not have secondary dichroic and band pass filter in scan head. It should be completely filter free at detection part for high efficiency.

Transmitted light detector to be provided for capturing bright field and DIC imaging.

## **Lasers and Software:**

All the laser should be controlled through AOTF for laser attenuation and switching in synchronization with scanner.

Blue Diode 405nm, Solid state 488, Solid state 561, Solid state 633.

- a. Basic image acquisition, Microscope control, scan head control and laser control software.
- b. Measurement of Intensity, length, area Area intensities through image stacks Online measurement while displaying a live image.
- c. Saving of all instrument parameters along with the image for repeatable /reproducible imaging.
- d. Frame/line/lambda capturing, Z-Stack, Time series imaging capabilities.
- e. Dedicated software for FRAP experiment.
- f. Co-localization analysis and volume rendering.
- g. Dedicated 3D software for 3D visualization & 3D reconstruction.
- h. Free Up gradation of software for at least 5 year

3 GHz-Intel Processor Core2Duo 500 GB Hard disk, 4GB RAM with two 19" monitor.

Service support: Proactive remote controlled service support to give advance information regarding Confocal Microscope.

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***Note: Supplier's should attach a compliance statement of quoted model with respect to the above specification.***