

What are you going to Do in your lab?

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|-----------------------|---|
| 1. Micro-propagation | higher costs, more expensive equipment/facilities |
| 2. Basic cell culture | lower cost lab |

Basic Requirements for a Tissue Culture Laboratory

1. Equipment and Apparatus: microscope, LAF, incubator (CO₂?), Refrigerator, Glassware, NUNC Plastic ware, dissection tools
2. Washing and storage facilities
3. Media Preparation Room
4. Sterilization Room
5. Aseptic chamber for culture
6. Culture rooms or incubators
7. Light & humidity control devices
8. Observation/recording area with a computer for data processing

Other Facilities

1. Hand washing area
2. Fire extinguishing system
3. Waste disposal facilities

Location

- beside a biology laboratory, particularly molecular biology laboratory (or a molecular biology laboratory should be beside a culture laboratory)
- far from other laboratories that handle dirty or pathogenic materials, e.g. microbiology laboratory
- >Could be positioned in different ends of a building
- >Or different floor of a building
- >Large-scale culturing facility should not be at the same building with microbiology laboratory at all.

Sectioning the Laboratory

-Flow of laboratory, with consideration for...

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|--------------------------------|---|
| 1. Sterility | washing area should not be in the centre of culturing area |
| 2. Convenience | washing area should be beside media preparation area |
| 3. Human movement | culturing area should not be near the entrance of the laboratory |
| 4. Area size | sectioning is more effective than wall-up different areas if area allocated is small |
| 5. Laboratory throughput | high throughput laboratory would have wider walkway as well |
| 6. Type of research | may need to allocate space for a gene gun or when working with Agrobacterium, or microinjection |
| 7. Location of equipment | electrical appliances should be near plug points, distillation unit should be near a tap |
| 8. Future laboratory expansion | - |

Design

- a) Plant Tissue Culture Lab with equipment
- b) Animal Cell Culture Lab with equipment

Simple Tissue Culture Lab Set-up

