Sample Preparations

1. Leica CM1950 Cryostat
2. Hirayama HV-85 Autoclave
3. Hirayama HG-80 Autoclave
4. Freeze Dryer
5. Vacuum Oven
6. Sputtering Machine
7. Ultracentrifuge
8. Deep Freezer
9. DI & Ultra Pure Water Machine
10. Ice Maker
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<tr>
<th>Equipment</th>
<th>Location</th>
<th>Contact Email</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leica Cryostat</strong></td>
<td>N1.2-B2-11</td>
<td><a href="mailto:KYHeng@ntu.edu.sg">KYHeng@ntu.edu.sg</a></td>
</tr>
<tr>
<td><strong>Hirayama HV-85 Autoclave for Waste</strong></td>
<td>N1.2-B3-10</td>
<td><a href="mailto:CBTeo@ntu.edu.sg">CBTeo@ntu.edu.sg</a></td>
</tr>
<tr>
<td><strong>Hirayama HG-80 Autoclave for Sample</strong></td>
<td>N1.2-01-25</td>
<td><a href="mailto:CMGan@ntu.edu.sg">CMGan@ntu.edu.sg</a></td>
</tr>
</tbody>
</table>

**Hirayama HV-85 Autoclave for Waste**

- **Outside Dimensions**: (19.7W x 27.2D x 35.0H) in (455W x 691D x 890H) mm
- **Chamber Dimensions**: (14.3D x 28.7H) in, (364D x 730H) mm  
- **Chamber Volume**: 76L working, 85.1L actual
- **Temperature Range**: 105°C to 135°C
- **Sterilization Timer**: 1 to 300 minutes

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**Hirayama HG-80 Autoclave for Sample**

- **Outside Dimensions**: (19.7W x 27.2D x 35.0H) in (455W x 691D x 890H) mm
- **Chamber Dimensions**: (14.3D x 28.7H) in, (364D x 730H) mm  
- **Temperature Range**: 105°C to 135°C
- **Sterilization Timer**: 1 to 300 minutes
Hirayama HV-85 Autoclave

Key features of AUTOCLAVE HIRAYAMA HV-85
- Capacity 85L
- Maximum Sterilize Temperature 135 Degree Celsius
- Selection of modes: Liquid, Solid, Agar
- Safety feature of dual-sensing lid interlock prevents lid opening when chamber is pressurized
- Automatic air purging by a microprocessor prevents overpressurization during a cycle.

Hirayama HV-50 Autoclave

Key features of AUTOCLAVE HIRAYAMA HV-50
- Capacity 50L
- Maximum Sterilize Temperature 135 Degree Celsius
- Selection of modes: Liquid, Solid, Agar
- Safety feature of dual-sensing lid interlock prevents lid opening when chamber is pressurized
- Automatic air purging by a microprocessor prevents overpressurization during a cycle.
- For Agar sterilization mode, maintains at liquid temperature after sterilization completed.
**ALPHA 2 Freeze Dryer**

**Key features of Alpha 2 Freeze Dryer**

- Alpha 2 base unit with:
  - Ice Condenser capacity: 4 kg
  - Ice Condenser performance: 4 kg / 24 hours
  - Ice Condenser temperature: -84°C
- Stainless Steel chamber with 3 shelves and 12 bottle valves for round-bottom flasks, wide-neck filter bottles or ampoule distributors
- Vacuum operation: 0.25 mbar
- Vacuum Sensor: Yes
- Solvent resistance: No

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**Cascade Tek TVO-2 Vacuum Oven with RV8 Pump**

**Key features of Cascade TEK TVO-2 Vacuum Oven**

- 1.7 Cubic Foot Vacuum Oven capacity
- Temperature Range: 5°C to 220°C
- Temperature Uniformity: ±7% of set-point @ 150°C
- Vacuum Range: Better than 30 Microns (29.9” Hg)
- Vacuum Gauge: 0-30” Hg
- Shelves 3 (stackable)
- Full Glass Viewing Door

Location: N1.3-B3-22/N1.3-B3-15
Contact email: Latifah@ntu.edu.sg/Chitra@ntu.edu.sg
Denton Explorer Sputtering Machine

Key features Denton Explorer Sputtering Machine
- Light production thin film DC sputtering system with graphic user interface and touch screen control.
- Manual or automatic operation of valves, pumps, low voltage sources, and fixture rotation subsystems is through this graphical interface.
- Deposition Chamber: 35 x 35 x 35cm in stainless construction.
- Gas supply: Argon for plasma and Nitrogen for venting
- Sputtering Target: 2
- Target available: Al, Au, Co, Fe, Mg, Ni, Si
- Rotation: 22rpm

Beckman Optimal L-90K Ultracentrifuge

Key feature Beckman Optima L-90K Ultracentrifuge
- Maximum speed: 40,000 rpm
- Speed control: +/-20 rpm of set speed
- Drive cooling: Air-cooled
- Refrigeration system: Thermo-electric
- Set temperature: 0 to 40 degrees centigrade in 1 degree increments
- Temperature control: +/- 0.5 degrees of set
- Moisture-purging vacuum system: Yes

Location: N1.3-B3-22
Contact email: SCYu@ntu.edu.sg/Latifah@ntu.edu.sg
Freezers

Key features of -20 °C Biomedical Freezer (Sanyo MDF U537D)
- Capacity 452L
- Temperature -18°C to -40°C
- Drawers available
- Temperature display: LED digital display, increase by 1°C and selectable to display upper or lower compartment by switching
- Alarms when High/Low Temperature ± 5°C ~ 15°C
- Alarms when Power failure

Key features of -80 °C Ultralow Freezer (Sanyo MDF-U32V)
- Capacity 333L
- Temperature: -50°C to -86°C
- Storage Inventory Racks (For Cryoboxes) & Drawers available
- Temperature display: LED digital display, increase by 1°C
- Alarms when High temperature, Low temperature, Power failure alarm, Door open, Filter check, Battery low

Key features of -80 °C Ultralow Freezer (Sanyo MDF-U53V)
- Capacity 519L
- Temperature: -50°C to -86°C
- Storage Inventory Racks (For Cryoboxes) & Drawers available
- Temperature display: LED digital display, increase by 1°C
- Alarms when High temperature, Low temperature, Power failure alarm, Door open, Filter check, Battery low

Location: N1.3-B3-22 / N1.3-B2-15 / N1.3-B4-21
Contact email: Chitra@ntu.edu.sg/EllaZhu@ntu.edu.sg
Millipore Water System

Location: N1.3-B2-16, B3-15, B4-21c
Contact email: Ellazhu@ntu.edu.sg

Location: N1.2-B3-12, N1.2-B1-04, N1.2-B2-11, N1.2-B2-41
Contact email: CBTeo@ntu.edu.sg
Hoshizaki FM-120EE Ice Maker

Key features of FM-120EE Ice Maker

- Shape of Ice: Flake
- Max Storage Capacity: Approx. 21kg