

# Lab Three:

## instruments and equipments in molecular lab

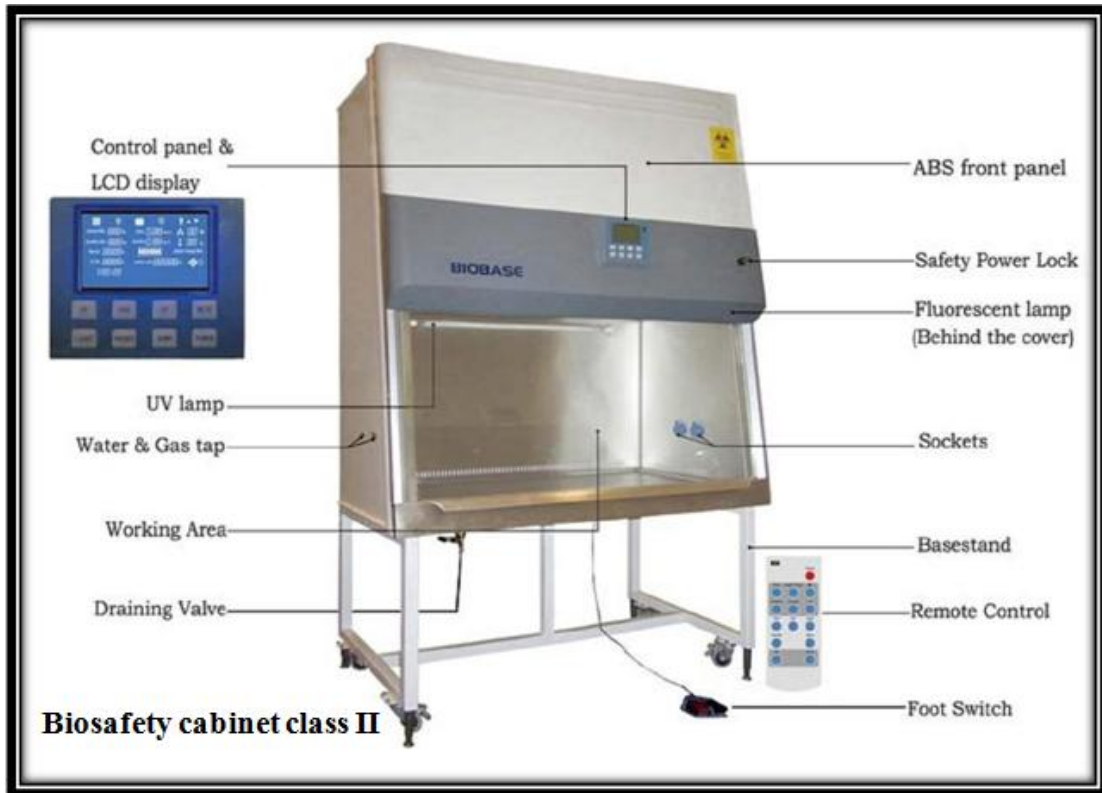
Biosafety cabinet (BSC): is an enclosed, ventilated laboratory workspace for safely working with materials contaminated with (or potentially contaminated with) pathogens requiring a define biosafety level. it found three classes of BSC depending on (providing safety to person, environment and samples)


**class I:** provide safety to person and environment only.



**class II:** provide safety to person, environment and samples.




**class III:** provide safety to person, environment and samples, generally only installed in maximum containment laboratories, is specifically designed for work with more dangerous pathogen like viruses .










Instrument	description	Picture
PCR work station	enclosed, sterilized space work.	

<p>Vortex shaker</p>	<p>To mix the reaction continent</p>	
<p>Cool centrifuge</p>	<p>To participate cell continent</p>	
<p>Conventional PCR</p>	<p>To amplified DNA molecules (quality identification)</p>	

<p>Real-time PCR</p>	<p>To amplified DNA molecules and measuring gene expression(quality and quantity identification)</p>	
<p>Nanodrop</p>	<p>To measuring nucleic acid concentration and purity</p>	
<p>Gel electrophoresis</p>	<p>To separate nucleic acid and protein with molecular weigh less than 10000 bp</p>	

<p>Pulse gel electrophoresis</p>	<p>To separate nucleic acid and protein with molecular weigh more than 10000 bp</p>	 <p>The image shows a Pippin LT Pulse electrophoresis system. It consists of a central white and blue power supply unit with the brand name 'Pippin LT Pulse' visible. To the left is a blue gel tank. To the right is a tablet displaying a software interface with various data points and graphs.</p>
<p>UV-Transilluminator</p>	<p>To detect nucleic acid and protein were separated in gel electrophoresis run</p>	 <p>The image shows a UV-Transilluminator, a rectangular device with a purple base and a silver top. It has a large black viewing area on top and a control knob on the right side. The brand name 'EQUIP' is visible on the front.</p>
<p>DNA sequencer</p>	<p>To determine sequence of nucleotide in DNA strand</p>	 <p>The image shows a DNA sequencer system. It includes a computer monitor displaying a software interface, a central sequencer unit with a blue and white design, and various laboratory supplies like pipette tips and tubes.</p>
<p>Deep freeze</p>	<p>To keep biological material in low temperature</p>	 <p>The image shows a deep freeze chest freezer, a tall, silver-colored unit with two doors and glass viewing windows. It has a control panel at the top.</p>

<p>Micropipettes in different size</p>	<p>To transfer the appropriate amount of volumes</p>	
<p>Different size of eppendorf tubes</p>	<p>To keep and holder samples in experiment</p>	