

Lab Four:.

instruments and equipments in molecular lab

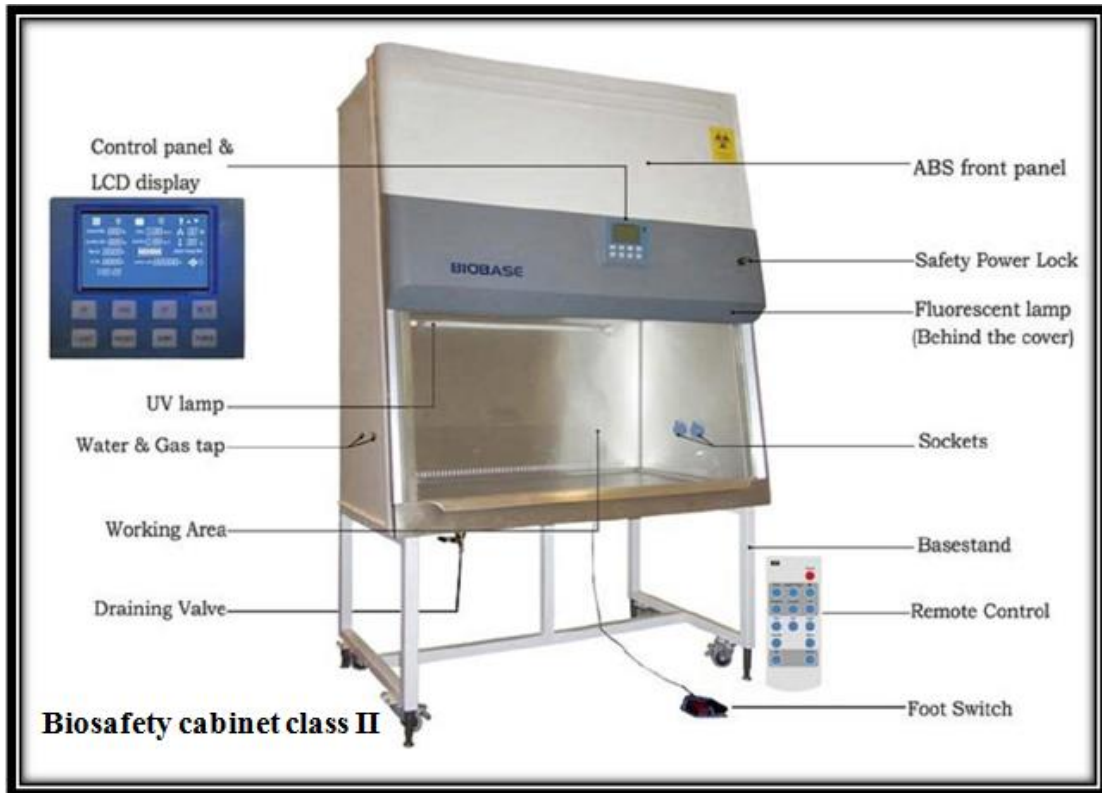
Biosafety cabinet (BSC): is an enclosed, ventilated laboratory workspace for safely working with materials contaminated with (or potentially contaminated with) pathogens requiring a define biosafety level. it found three classes of BSC depending on (providing safety to person, environment and samples)


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 .

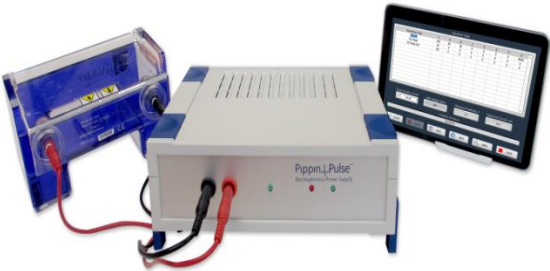








Instrument	description	Picture
PCR work station	enclosed, sterilized space work.	

<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 a digital display and control buttons. To the left is a blue power source with red and black cables connected to the main unit. To the right is a tablet computer displaying a software interface for running and monitoring the electrophoresis process.</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 laboratory instrument with a purple base and a clear top cover. It is used for visualizing DNA and protein bands in gels under ultraviolet light. The front panel features a control knob and a power button.</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 large white and blue instrument with a viewing window, a computer monitor displaying sequencing data, and various laboratory supplies like pipette tips and tubes arranged on a surface in front of the machine.</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, white laboratory-grade refrigerator with two doors and glass viewing windows. It is designed for storing biological samples at very low temperatures.</p>

<p>Micropipettes in different size</p>	<p>To transfer the appropriate amount of volumes</p>	 <p>0.2 - 2 µL 1 - 10 µL 2 - 20 µL 10 - 100 µL 20 - 200 µL 100 - 1000 µL</p> <p>0.2 - 2 nL 1 - 10 nL</p> <p>1 - 10 µL 10 - 100 µL 20 - 200 µL</p>
<p>Different size of eppendorf tubes</p>	<p>To keep and holder samples in experiment</p>	