

## Risk Group and Biosafety Level Containment

Risk Group (NIH Guidelines)	Biosafety Containment Level	Examples
<b>Risk Group 1:</b> Agents are <i>Not</i> associated with disease in healthy adult humans. (Low risk)	BSL-1 <ul style="list-style-type: none"> <li>• Work is done on open bench tops and special containment equipment is not required.</li> <li>• Standard microbiological practices are observed.</li> <li>• Biohazard signs should be posted</li> </ul>	Escherichia coli; K12 derivatives (DH5a, JH109, pBluescript, psi2)
<b>Risk Group 2:</b> Agents are associated with human disease which is rarely serious. There are often preventive or therapeutic interventions available. (Moderate risk)	BSL-2 <ul style="list-style-type: none"> <li>• All BSL-1 containment and practices plus the following:</li> <li>• Laboratory access is restricted when experimental work is in progress</li> <li>• Personnel have specific training in handling of agents</li> <li>• Biological safety cabinets (BSC) or other physical containment devices are used for potential aerosol generation procedures</li> <li>• Biohazard signs must be posted</li> <li>• Specific PPE (personnel protective equipment) and entrance requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Adenovirus all types; human</li> <li>• All human blood-contaminated specimens; HIV/SIV infected animals</li> <li>• Human cell lines eg. HEK 293</li> <li>• Herpes Simplex Virus</li> <li>• Rabies Virus</li> <li>• Pseudorabies Virus</li> </ul>
<b>Risk Group 2 or Risk Group agents; Protocol specific</b> (Moderate to High risk)	BSL-2+ ("Plus") <ul style="list-style-type: none"> <li>• All BSL-2 facilities, containment and practices PLUS BSL-3 practices including:               <ul style="list-style-type: none"> <li>○ Restricted Laboratory access</li> <li>○ Personnel have specific training in handling of agents</li> <li>○ All procedures are performed in biological safety cabinets (BSC)</li> <li>○ Biohazard signs must be posted</li> <li>○ Written safety policies provided by the investigator defining laboratory procedures, waste disposal, disinfection and medical surveillance</li> <li>○ Centrifuge safety cups must be used</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Lentiviral vectors, such as:</li> <li>• SIV; proviral DNA</li> <li>• HIV-1 infectious molecular clones</li> </ul>
<b>Risk Group 3:</b> Agents are associated with serious or lethal human disease for which preventive or therapeutic interventions <i>MAY</i> be available. (High risk)	BSL-3 <ul style="list-style-type: none"> <li>• NO current facilities exist to accommodate risk group 3 agents at CMU</li> </ul>	<b>None;</b> no current usage of this risk group classification at CMU
<b>Risk Group 4:</b> Agents are likely to cause serious or lethal human disease for which preventive or therapeutic interventions are NOT USUALLY available. (Extreme risk)	BSL-4 <ul style="list-style-type: none"> <li>• NO current facilities exist to accommodate risk group 4 agents at CMU</li> </ul>	<b>None;</b> no current usage of this risk group classification at CMU