





BIOSAFETY

UNDERSTANDING RISK GROUPS AND BIOLOGICAL SAFETY LEVELS

				
	BSL-1	BSL-2	BSL-3	BSL-4
DESCRIPTION	Risk Group 1 <ul style="list-style-type: none"> Not known to cause disease in healthy adults 	Risk Group 2 <ul style="list-style-type: none"> Pose moderate potential hazard to personnel and the environment 	Risk Group 3 <ul style="list-style-type: none"> Cause serious or potentially lethal disease via inhalation 	Risk Group 4 <ul style="list-style-type: none"> Pose a high individual risk of life-threatening disease
LAB PRACTICES	<ul style="list-style-type: none"> Standard Microbiological Practices (SMPs) are followed Open bench work 	BSL-1 plus: <ul style="list-style-type: none"> Restricted access during work 	BSL-2 plus: <ul style="list-style-type: none"> Medical surveillance 24/7 restricted and controlled access 	BSL-3 plus: <ul style="list-style-type: none"> Before entering: change clothes Upon exit: shower & decontaminate all materials
SAFETY EQUIPMENT	<ul style="list-style-type: none"> PPE (lab coat, gloves) are worn as needed 	BSL-1 plus: <ul style="list-style-type: none"> Goggles as needed Biological safety cabinet (BSC) Autoclave 	BSL-2 plus: <ul style="list-style-type: none"> Respirators worn as needed Work must be conducted in BSCs 	BSL-3 plus: <ul style="list-style-type: none"> Full-body positive pressure suit is worn OR conduct work in Type III BSC
FACILITY CONSTRUCTION	<ul style="list-style-type: none"> Sink Doors separate lab from other workspaces 	<ul style="list-style-type: none"> Sink & eyewash Self-closing doors 	<ul style="list-style-type: none"> Hands-free sink and eyewash No circulation of exhaust air Two sets of self-closing & locking doors 	BSL-3 plus: <ul style="list-style-type: none"> Separate building / isolated & restricted area Separate supply & exhaust air, vacuum line, decontamination system
EXAMPLES	<ul style="list-style-type: none"> Non-pathogenic strains of <i>E. coli</i> Adeno-associated virus 	<ul style="list-style-type: none"> <i>Staphylococcus aureus</i> <i>Vibrio cholerae</i> Lentiviral vector Adenovirus 	<ul style="list-style-type: none"> <i>Mycobacterium tuberculosis</i> <i>Bacillus anthracis</i> West Nile virus 	<ul style="list-style-type: none"> Ebola virus Marburg virus Small pox virus

BSL-3 and BSL-4 work are prohibited at HKUST