

Genetic Engineering: Risk Assessment

Activity	Hazard	Precaution	Risk
Preparing competent <i>E.coli</i> bacteria	<ul style="list-style-type: none"> <i>E. coli</i> strains K12, HB101: Biohazard 	<ul style="list-style-type: none"> Strains K12 and HB101 are harmless laboratory strains of <i>E. coli</i> Students instructed in good aseptic technique Students instructed to wash hands before and after practical and to wear lab coats at all times 	Very low
Plasmid DNA	None identified	None required	None
Bacterial transformation (heat shock)	None identified	None required	None
Plating bacteria	<ul style="list-style-type: none"> Burns from Bunsen flame (if used) 	<ul style="list-style-type: none"> Students shown how to use Bunsen flame safely Activity closely supervised Bunsen burners only lit for duration of plating activity, then turned off by demonstrator 	Low
Culturing bacteria	<ul style="list-style-type: none"> Bacterial cultures: Biohazard 	<ul style="list-style-type: none"> Only non-pathogenic bacteria provided for culturing Cultured plates photographed and images sent to students – plates remain in Lifelab and are disposed of safely 	Very low
Viewing fluorescent colonies (pGLO only)	<ul style="list-style-type: none"> UV lamp 	<ul style="list-style-type: none"> UV lamp shielded so light only shines downwards onto plates Students to stand at a safe distance Demonstrator to operate lamp, taking care not to expose eyes or skin to UV light 	Very low