

Hands-on DNA: *Bacterial Evolution* – Workshop timings

The times below are a guide for how to run the workshop in 2.5 hours. It is important that both the restriction digest and gel electrophoresis steps are given the recommended times (30 min each) otherwise the results of the workshop are likely to be compromised.

Depending on the students the sections of background information might take less time, but it's likely that the timings will be a fairly tight fit.

| Time | Activity | Time for this section (minutes) |
|-------|--|---------------------------------|
| 0m | Introduction to workshop | 5 |
| 5m | Background: <i>S. pyogenes</i> | 10 |
| 15m | Micropipetting practice | 10 |
| 25m | Digest setup | 20 |
| 45m | <i>During digest (30 min):</i> Background: DNA and bacterial structure Background: Immunity, <i>S. pyogenes</i> and <i>M/ emm</i> | 15 |
| 1h | Background: Restriction enzymes Restriction enzyme exercise ❖ Take digest samples out of water bath and spin down towards end of this session. Return to students in ice pots. | 15 |
| 1h15m | <i>Emm</i> typing using restriction enzymes Sample prep for loading Set up gel tanks | 15 |
| 1h30m | ❖ Demonstrate gel loading, load DNA ladder Students load practise and real samples Class all switch on their gels together | 15 |
| 1h45m | <i>During gel running (30 min):</i> Background: Electrophoresis Background: Evolution and Natural Selection Bacterial Evolution game | 25 |
| 2h10m | Background on DNA staining Turn off gel tanks Students look at results | 10 |
| 2h20m | Results summary What advice would students give? | 10 |
| 2h30m | Workshop end Students and teacher(s) fill out evaluation forms Students wash hands before leaving the lab | |