

### **Agarose gel extraction**

Agarose gel extraction was performed using the Zymoclean™ Gel DNA Recovery Kit from Zymo Research.

1. Excise the DNA fragment from the agarose gel using a razor blade, scalpel or other device and transfer it into a 1.5 mL microcentrifuge tube.
2. Add 3 volumes of ADB to each volume of agarose excised from the gel (e.g. for 100  $\mu$ L (mg) of agarose gel slice add 300  $\mu$ L of ADB).
3. Incubate at 37-55 °C for 5-10 minutes until the gel slice is completely dissolved.
4. Transfer the melted agarose solution to a Zymo-Spin™ Column in a Collection Tube.
5. Centrifuge for 30-60 seconds at 11,000x g. Discard the flow-through.
6. Add 200  $\mu$ L of DNA Wash Buffer to the column and centrifuge for 30 seconds at 11,000x g. Discard the flow-through. Repeat the wash step.
7. Add  $\geq 6$   $\mu$ L DNA Elution Buffer directly to the column matrix and incubate for 1 minute at room temperature.
8. Place column into a 1.5 mL tube and centrifuge for 30-60 seconds at 11,000x g to elute DNA.