Webinar
DNA barcoding

12 steps to acquire a DNA barcode

Prepared by:
iBOL
International Barcode of Life Consortium

Technical support:
Centre for Biodiversity Genomics
University of Guelph

Centre for Biodiversity Genomics

Convention on
Biological Diversity

international
BARCODE
OF LIFE

Acknowledgements

Reagents and supplies

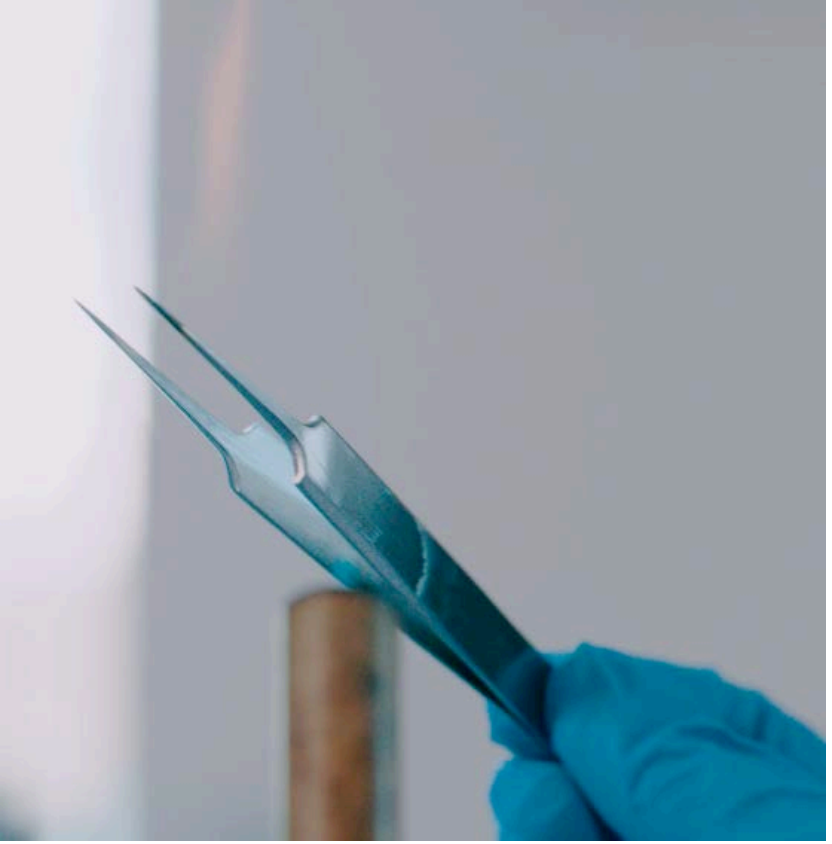
- Lysis buffer
- Binding buffer
- Wash buffer
- 96% Ethanol
- ddH_20 or Elution buffer
- Crushed ice or chilled tube racks
- PCR mastermix
- Agarose powder
- Gel electrophoresis buffer
- Gel loading dye
- Eliminase
- Microcentrifuge tubes (1.5mL, 2.0mL) and sticker labels
- Spin-columns and collection tubes
- PCR tubes (0.5mL)
- Disposable tips for micropipettes

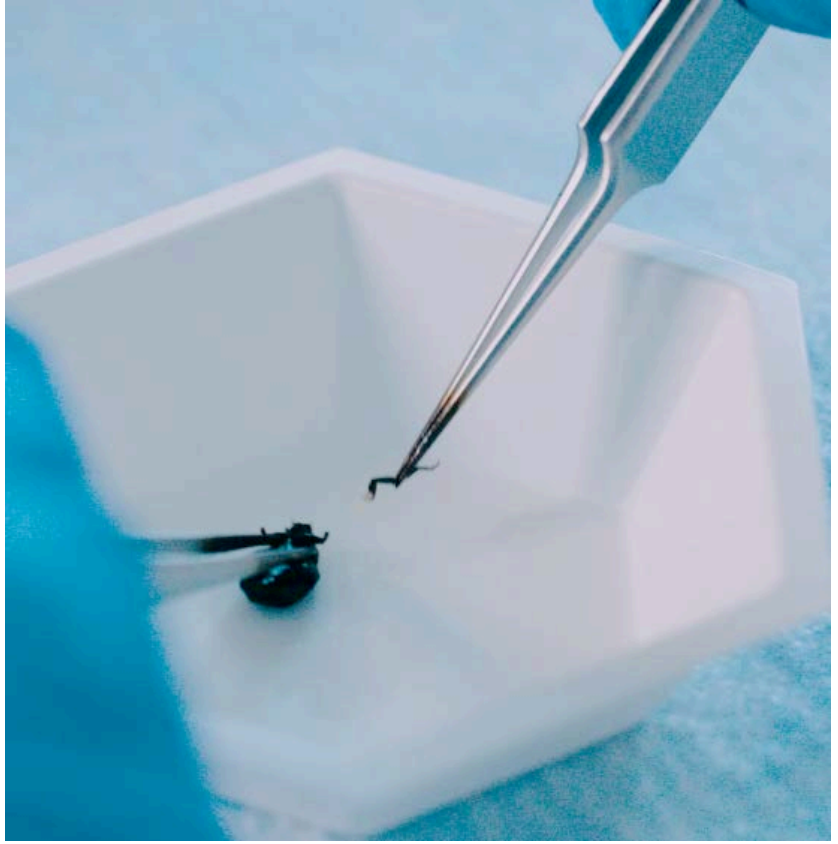
Laboratory equipment

- Personal protective equipment (lab coat, gloves, safety goggles)
- Sterile tray for specimen
- Burner
- Forceps
- Tube racks
- Micropipettes (10uL, 100uL, 1000uL)
- Vortex mixer
- Microcentrifuge
- Incubator
- PCR thermocycler
- Conical flask
- Microwave
- Gel casting platform
- Power supply
- Gel UV box
- Sequence editing software

STEP 1

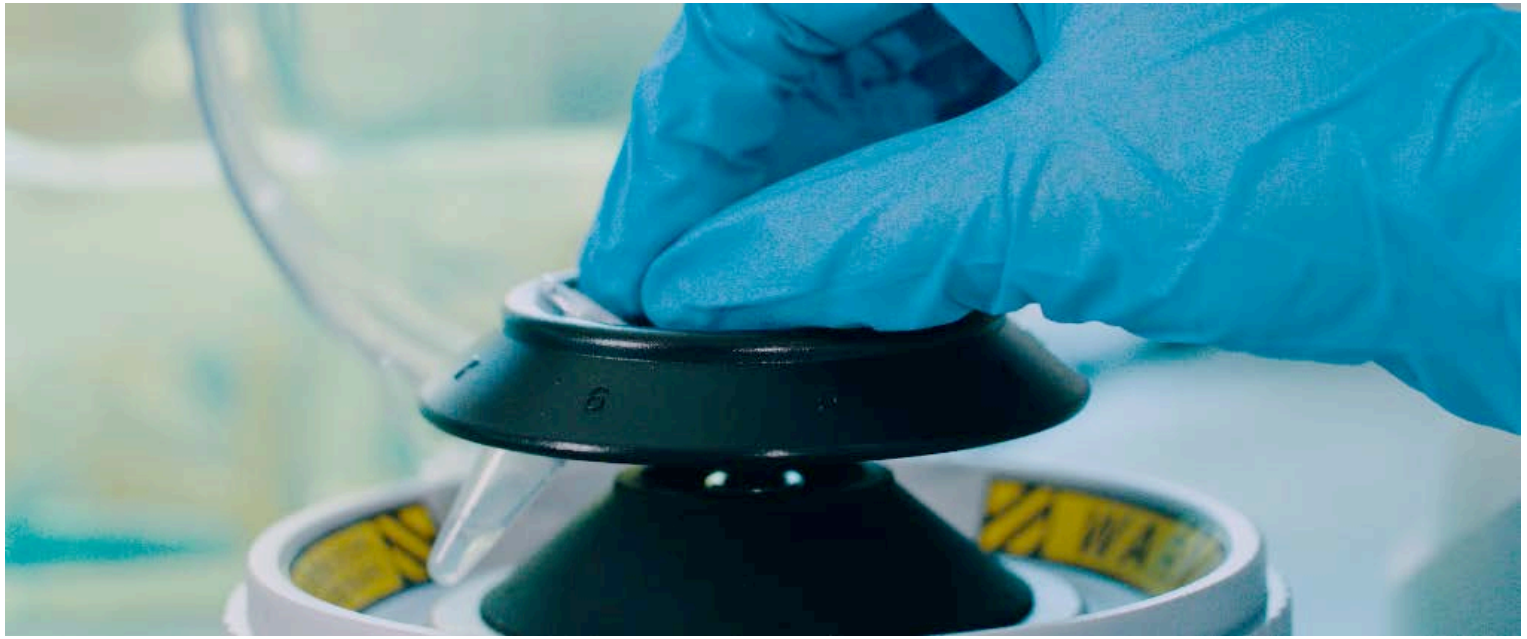
Assemble equipment and reagents.





STEP 2

Harvest tissue.

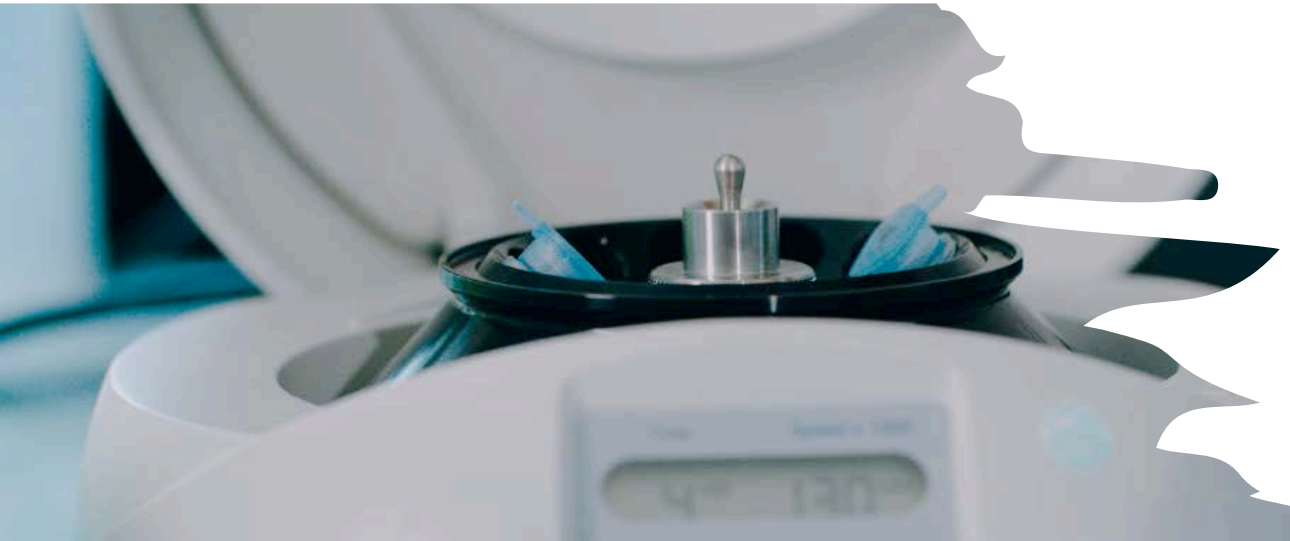


STEP 3

Place tissue in lysis buffer.

EXTRACTION AND PURIFICATION

STEP 4 Lyse tissue in incubator.

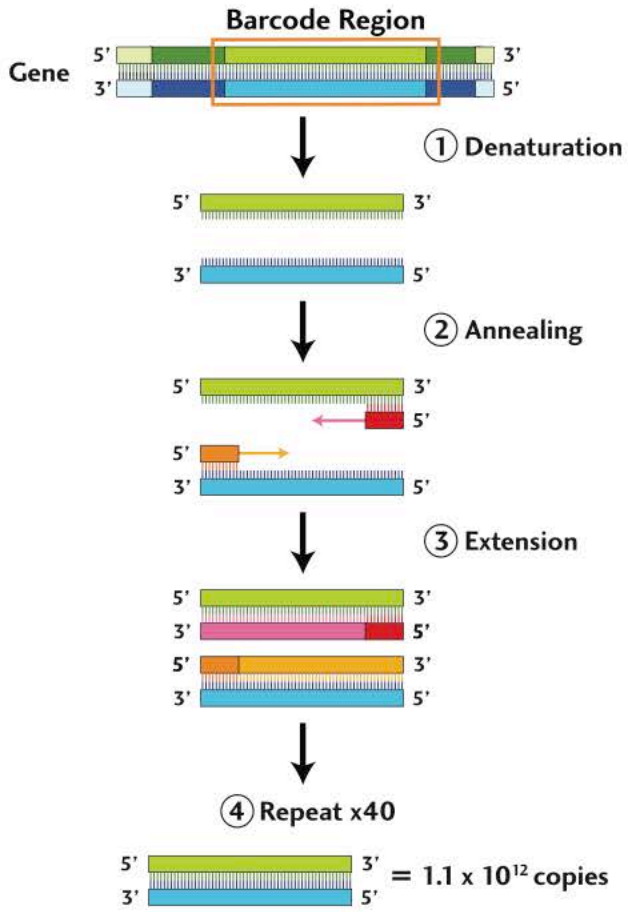


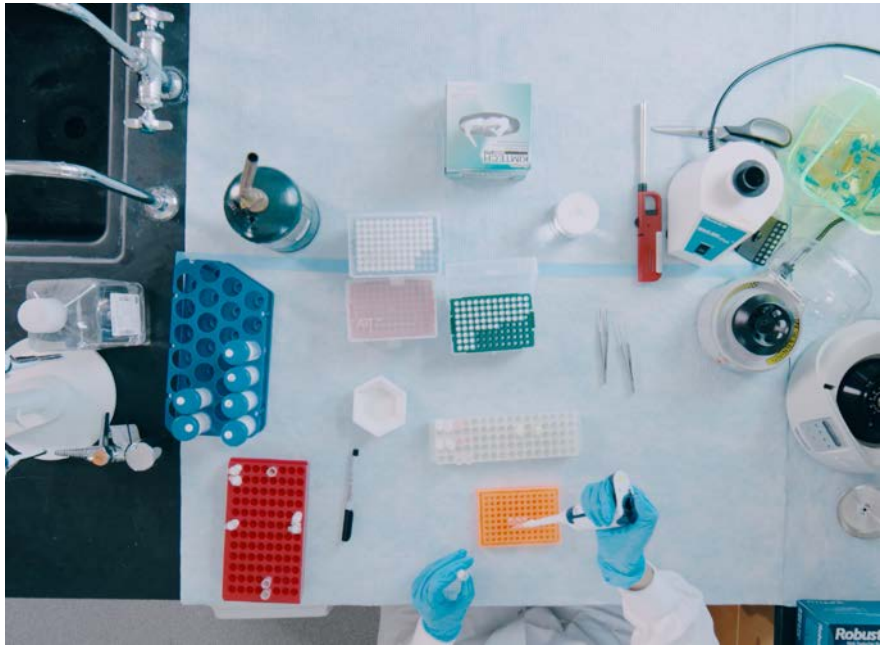
EXTRACTION AND PURIFICATION

STEP 5 Extract DNA.

Polymerase Chain Reaction (PCR)
STEP 6 Prepare reagents for PCR.

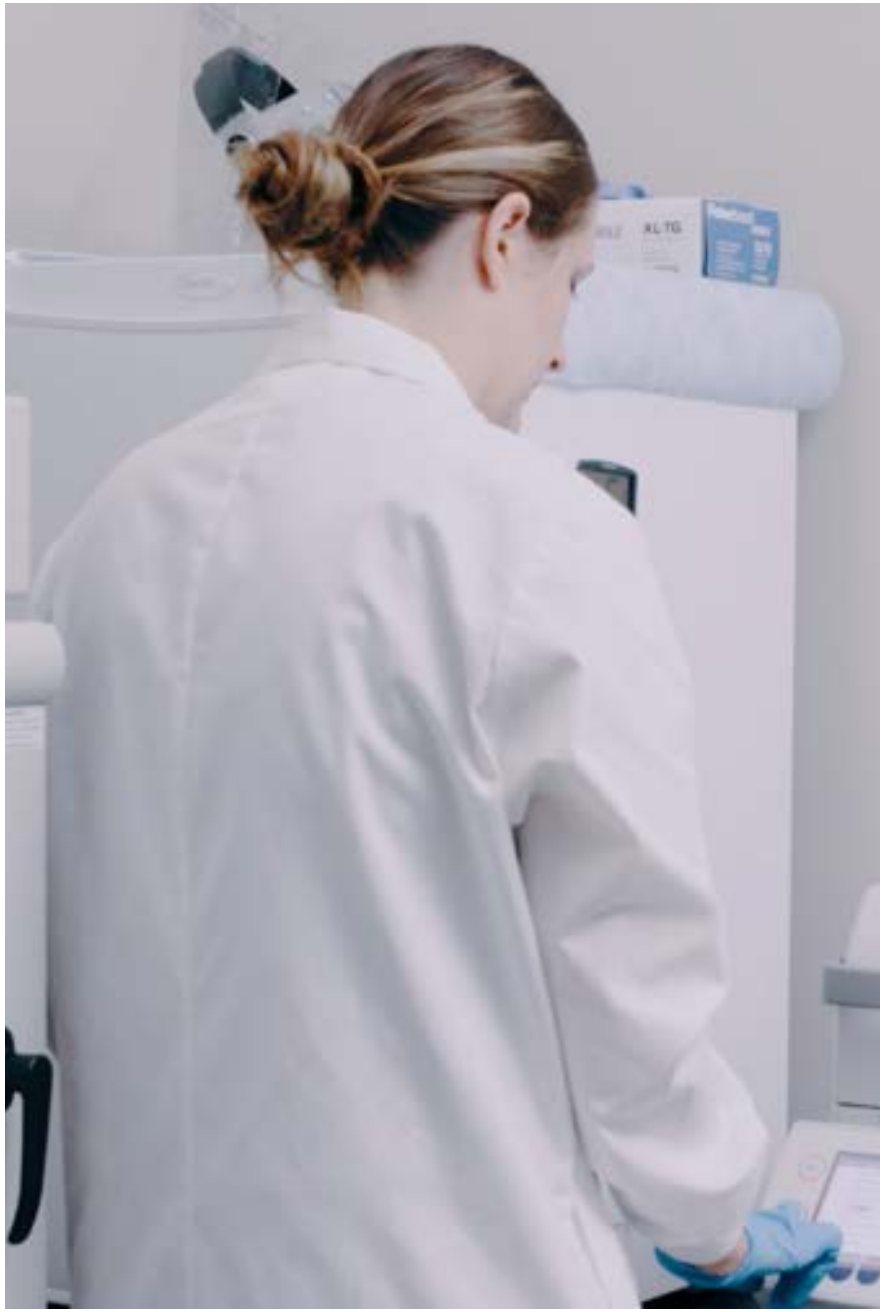
Set up PCR reaction for barcode region.





PCR

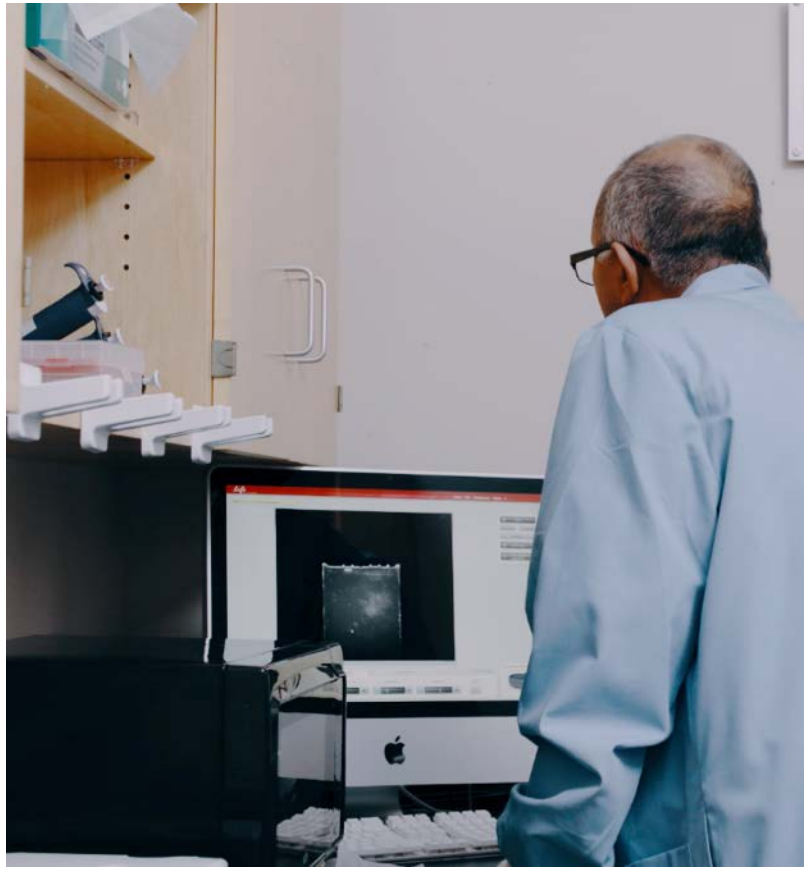
STEP 7 Set up PCR reaction.

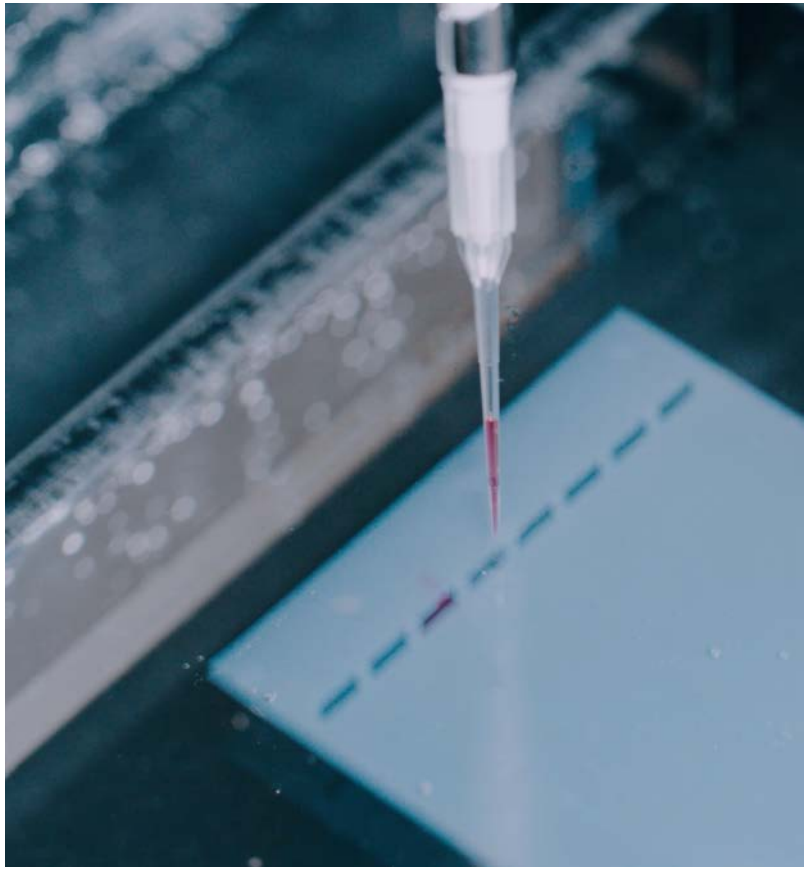


PCR

STEP 8 Place tubes in thermocycler.

Gel electrophoresis
STEP 9 Cast a gel.



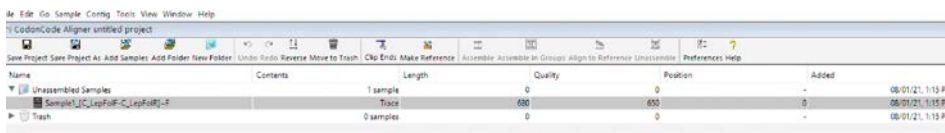


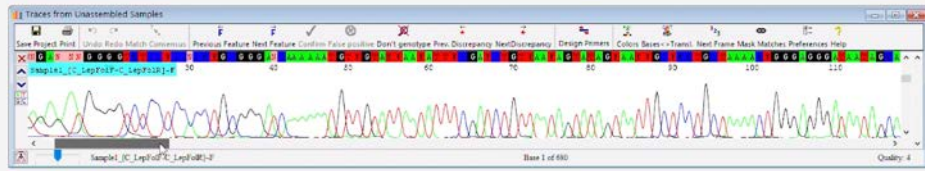
PCR check

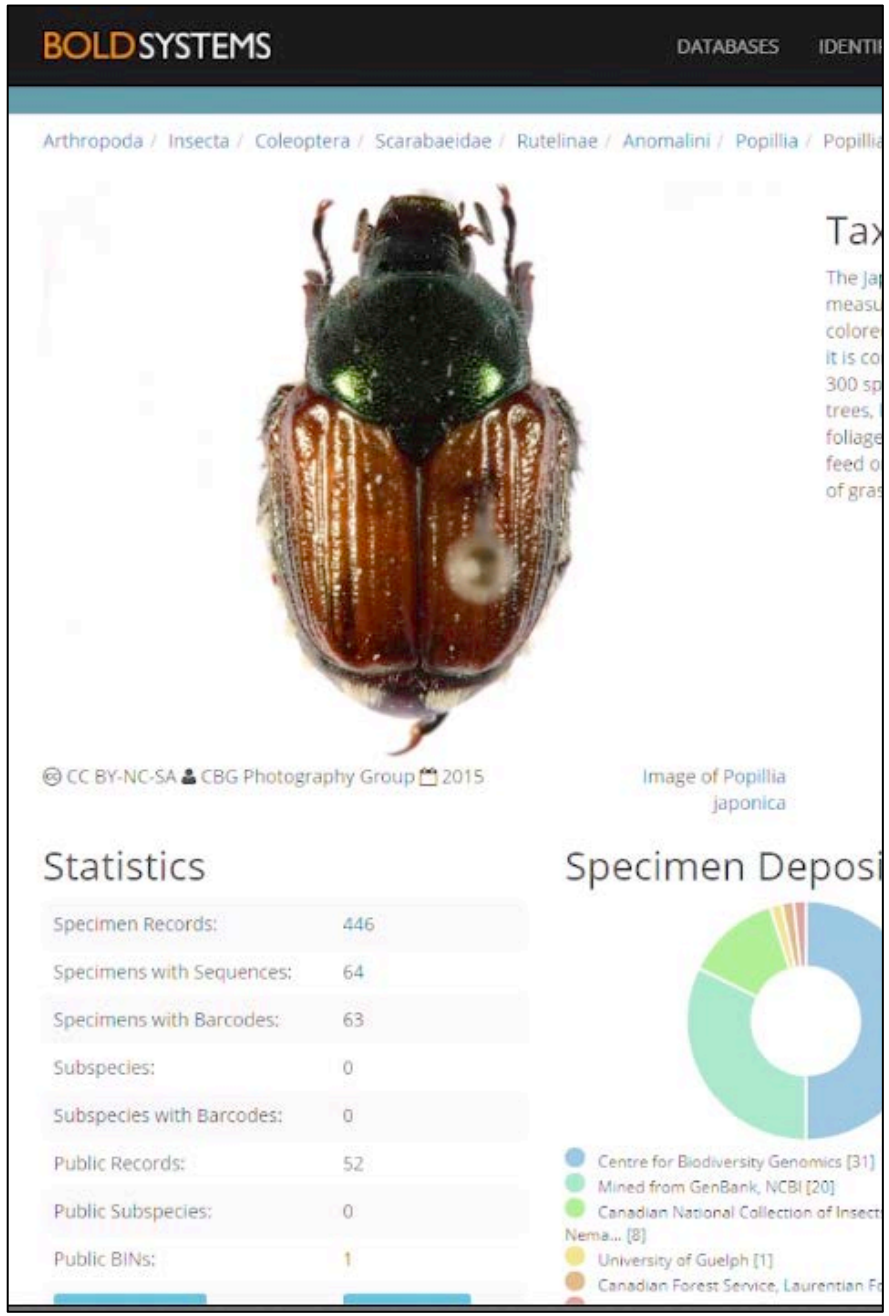
STEP 10 Run gel and image.

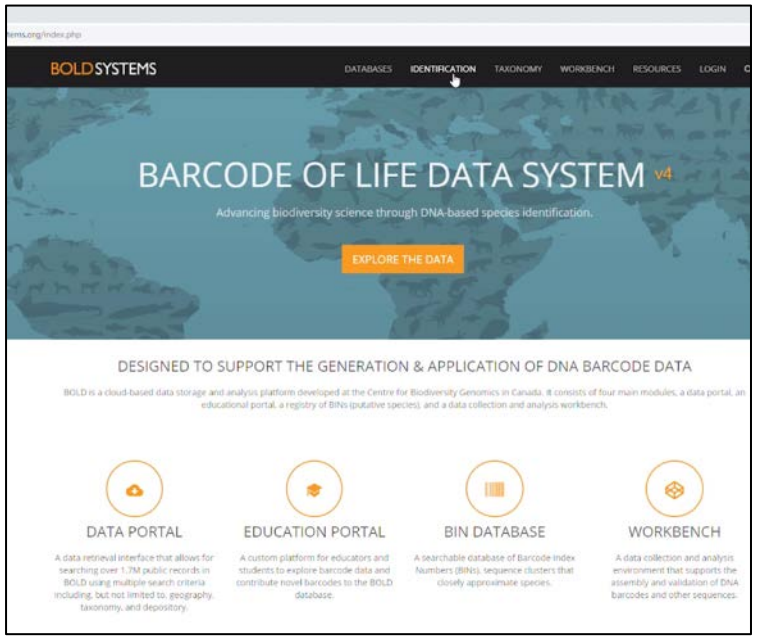
STEP 11

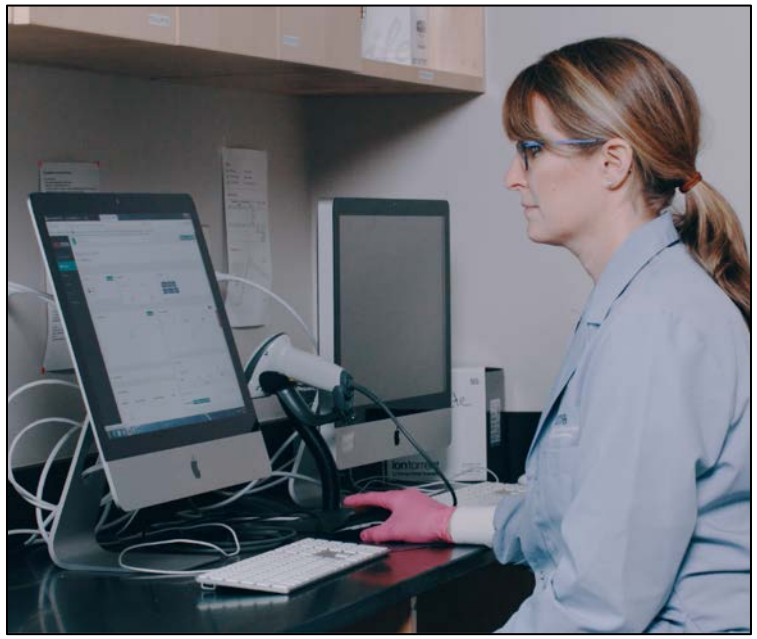
Sequence and validate data.











STEP 12

Analyze data on BOLD.

For more information on the Barcode of Life Data System (BOLD) visit:
www.boldsystems.org

For more information on DNA barcoding as well as technical resources and support, please visit:

- biodiversitygenomics.net
- boldsystems.org
- cbd.int
- ccdb.ca
- ibol.org