



GENES IN A BOTTLE ACTIVITY

Activity Instructions

These instructions describe each step of the activity. The entire activity should take approximately 30 minutes.

1

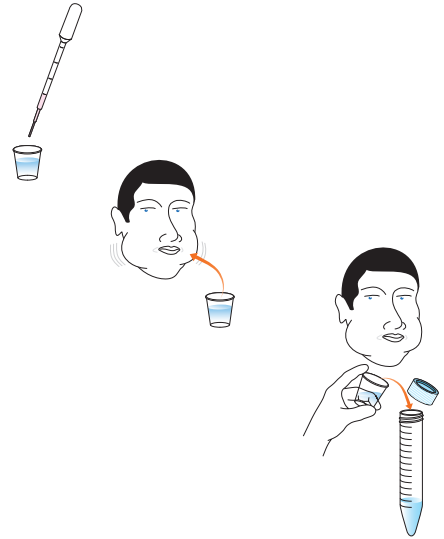
Cheek Cell Collection

A. Open the zip-top bag of reagents on your desk.

- Take out the 15 ml conical tube which contains 3 ml of water and label with your initials
- Practice using the transfer pipet by transferring 1 ml of water from a large cup to your small cup. Repeat 3 times for a total of 3 ml of water
- Take the water from the small cup into your mouth — don't swallow it!
- Swish the water around like mouthwash and gently chew on the inside of your cheeks while you swish the water around
- Swish the water around for 30–60 seconds

B. Carefully expel the water back into the small paper cup.

- The swishy water mix contains your cheek cells!
- Pour the water-cheek cell mix back into your 15 ml tube



2

Cell Lysis and Proteolysis

A. Open the colored micro test tube with the protease/salt/lysis buffer (lysis buffer for short).

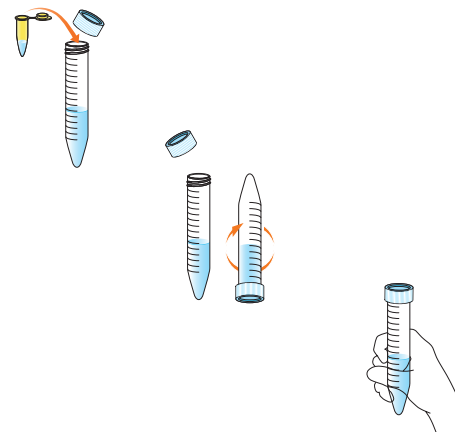
- Pour the lysis buffer into your water-cheek cell mix
- The lysis buffer will now start to “lyse” or break open your cheek cells

B. Place the cap back on the tube.

- Gently invert (mix) your tube back and forth 5 times — don't shake it!
- Observe your tube — do you notice any changes?

C. Incubate the tube in your hand.

- Hold the tube in the palm of your hand for 5 minutes
- During this incubation period, the lysis or breaking apart of your cells will be completed



BIO-RAD



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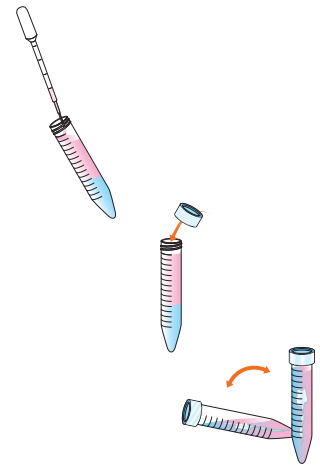
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3

DNA Precipitation

A. Hold your tube at a 45° angle and slowly fill the tube with alcohol.

- Add the alcohol to the 14 ml mark
- Cap your tube then let stand undisturbed for 5 minutes. What do you see? You should begin to see bubbles and white strands appearing at the interface between the alcohol (on top) and lysed cells (on bottom) — that is your DNA!
- Very gently tilt the tube on its side and turn upright about 10 times until the water and alcohol phases are mixed
- Once mixed, the DNA should be fully visible as a “precipitate”



4

Necklace Assembly

A. Transfer your DNA to the amulet.

- Place the amulet on your desk
- Using a plastic pipet, carefully transfer as much of your DNA precipitate and only as little alcohol as you can into the amulet
- The amulet requires approximately 0.5 ml to fill

B. Assemble the necklace.

- Screw on the cap onto the amulet
- Slip the waxed cord through the cap. Your necklace is now complete! Your DNA will be preserved forever!

