Onion DNA Extraction

Materials

- fresh onions
- graduated cylinders (10ml and 100ml)
- knife
- 15 ml test tube
- blender
- test tube rack or 250 ml beaker
- strainer
- glass stirring rod
- coffee filters
- non-iodized salt
- Adolph's natural meat tenderizer
- Palmolive detergent
- beaker
- distilled water
- ice cold 95% ethanol

Solutions

Detergent/salt solution:

- 20 ml detergent
- 20 g non-iodized salt
- 180 ml distilled water

5% meat tenderizer solution:

- 5 g meat tenderizer
- 95 ml distilled water

Protocol

1. Cut an inch square out of the center of 3 medium onions. Chop and place in a blender.
2. Add 100 ml of detergent/salt solution.
3. Blend on high 30 sec-1 minute.
4. Strain the mixture into a beaker using a strainer with a coffee filter.
5. Add 20-30 ml meat tenderizer and stir to mix.
6. Place 6 ml filtrate in a test tube.
7. Pour 6 ml ice cold ethanol carefully down the side of the tube to form a layer.
8. Let the mixture sit undisturbed 2-3 minutes until bubbling stops.
9. The DNA will float in the alcohol. Swirl a glass stirring rod at the interface of the two layers to see the small threads of DNA.

Liver DNA Extractions

Materials

- fresh thymus
- blender
- beaker
- sugar
- pipet
- centrifuge tube with cap
- bufferin (325mg)
- knife
- graduated cylinders (10ml,100ml)
- epsom salts
- distilled water
- centrifuge
- 95% ice cold ethanol
- 15 ml test tubetest tube rack or beaker
- Palmolive detergent
- non-iodized salt

Solutions

prep buffer solution:

- 57 g granulated sugar
- 1 buffered aspirin
- 3 g epsom salts
- add distilled water for a total of 500 ml

10% detergent solution:

- 90 ml distilled water
- 10 ml Palmolive detergent

salt solution:

- 29.2 g non-iodized salt
- add distilled water for a total volume of 250 ml

Protocol

1. Cut out a chunk of liver or thymus 1 inch square and place in the blender.
2. Add 100 -150 ml prep buffer and 10 ml detergent solution to the blender.
3. Blend for 1 minute or until the mixture is smooth.
4. Pour the mixture into a beaker.
5. Transfer 1 ml of the mixture to a centrifuge tube.
6. Add 2 ml of salt solution, cap, and shake for 2 minutes.
7. Centrifuge for 7 minutes in a balanced centrifuge.
8. Carefully remove the tube from the centrifuge and note the two layers:
    - lower layer - pellet
    - *upper layer - liquid (supernatant) and what has the DNA in it.
9. Pipette or carefully pour the liquid into a clean test tube.
10. Pour 5 ml ice cold ethanol carefully down the side of the tube to form a layer.
11. Let the mixture sit undisturbed for a minute or two.
12. The DNA will float in the alcohol. The DNA of the thymus will be long threads that easily spool.