

Preparation of Genomic DNA from Plant Tissues



- Aim

- DNA Extraction from strawberry and Review the main steps in the DNA extraction protocol and the chemistry involved in each step

DNA Extraction from plant

- Plant cells are distinguishable from animal cells by containing a hard cellulose cell wall and organelles like the chloroplasts.
- Like mitochondria, plants contain chloroplasts that have their own DNA. The differences between plant and animal DNA lie in the sequence of bases in the helix.
- The genomic plant DNA is often larger than animal DNA.

Application

- Studying the effect of DNA
- Genetic engineering to produce genetically modified plants
- the production of recombinant medicines and industrial products

DNA Extraction from Plant

- Plant genomic DNA is more difficult to extract because of the plant's cell wall, which is removed (break down).
- The cell wall (made of cellulose) is disrupted by either mechanical force (for example, grinding the leaves) OR NON-MECHANICAL METHODS

Principle of DNA Extraction from plant:



weight the plant



Lysis
(MECHANICAL
METHOD OF CELL
DISRUPTION)



the addition
of a detergent

having both
hydrophilic and
hydrophobic
regions)

To break
cell
membrane

Remove cell disturbs



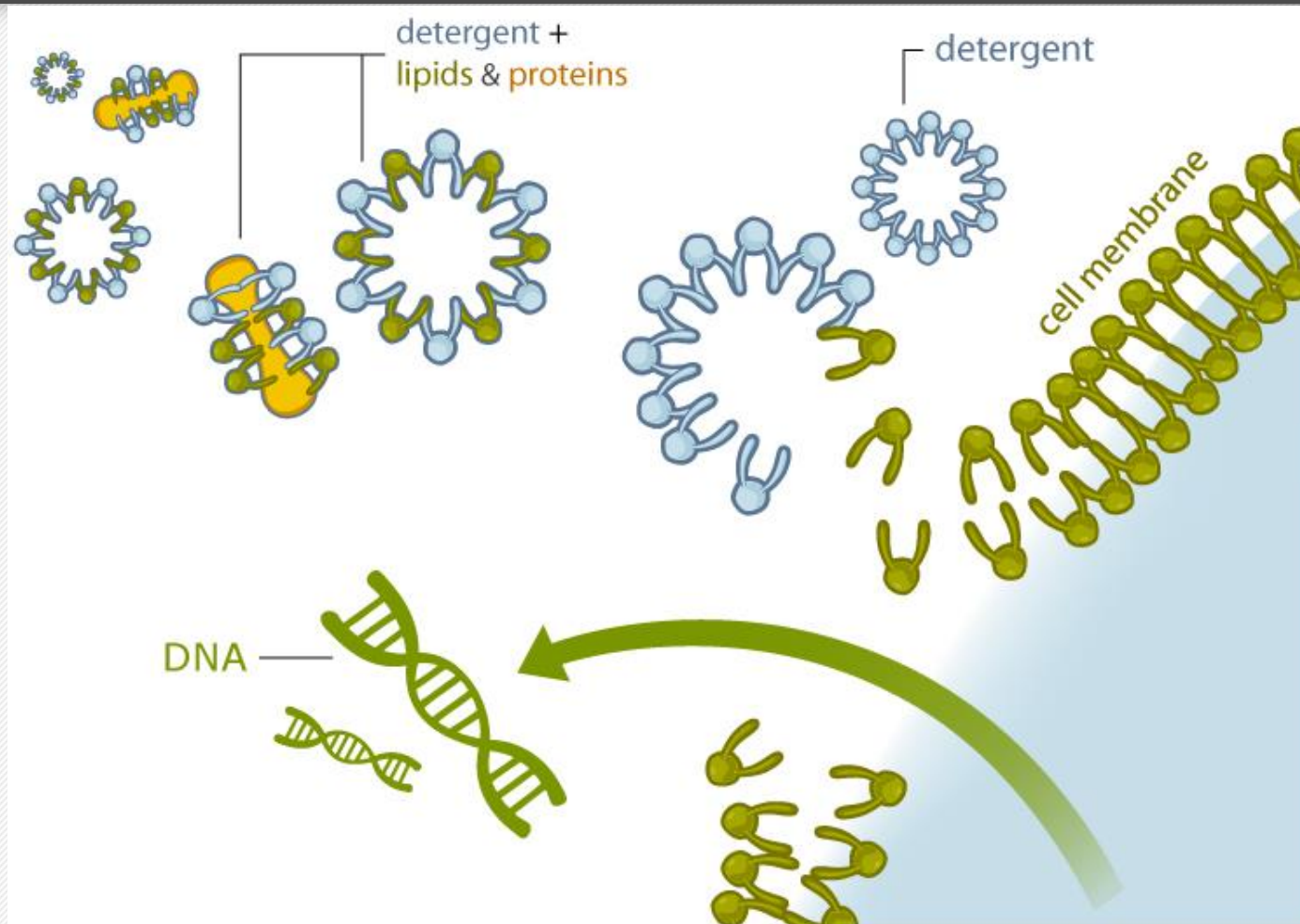
through
cheesecloth into
clean beaker
And then take 2
ml of the
mixture to clean
test tube

PRECIPITATION of
DNA

Addition of
Ice cold
ethanol

Using a clean Pasteur pipette, spool
the DNA onto the hooked end and
then add TE buffer or Water.

How to detergent work in removing cell membrane



DNA Quality and Quantity



DNA Quality and Quantity

- After extraction, DNA integrity must be checked.

