

## Wheat Germ DNA Extraction

DNA or Deoxyribonucleic Acid is a molecule that holds our genetic code. It is in the shape of a twisted ladder. This shape is called a double helix. We are going to extract DNA from wheat germ. -

### Materials (Provided in Teacher Kit):

Condiment container with lid

1g raw wheat germ

hot water (not provided)

1 mL or one squirt dishwashing soap

10 mL rubbing alcohol

Popsicle stick

Vial with lid (Eppendorf Tube)

### Procedure:

1. Add wheat germ to clean condiment container
2. Fill warm water in cup a little past the bottom indent
3. Place lid on wheat germ container and shake for 3 minutes
4. Add the dishwashing soap and shake/stir GENTLY for 2 minutes
5. Remove foam from top using wooden stick
6. Slowly add the rubbing alcohol so that there are two layers
7. Use the popsicle stick to collect the white foamy/slimy layer. To do this spin the stick around like you are trying to grab spaghetti.
8. Scrape the DNA off into the vial with lid (Eppendorf Tube). Now you have your very own DNA sample!

DNA is in the nucleus of the cell, so to extract the DNA we have to break down the cellulose that makes up the cell wall as well as the nuclear membrane. We do that by shaking the mixture with warm water. We then used the soap to dissolve the lipid layers to free the DNA. DNA does not dissolve (is insoluble) in alcohol, so once the alcohol is added we are able to see the millions of DNA strands clumped together in the solution.