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## DNA Extraction from Wheat Germ

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1. **Put 1 g (@ 1t.) raw wheat germ in a 50 ml test tube or other container such as a spice jar.** This procedure will work only with raw wheat germ, which can be purchased at a health food store. Toasted wheat germ does not work.
2. **Add 20 mls (@ 1 1/2T.) of hot (50-60°C) tap water and mix gently but constantly for 3 min.** The hottest water that comes out of the tap will probably be in this temperature range. Do not use water that is too hot to touch or boiling water. The hot water will help soften the cell wall and cell membrane, and will denature proteins which might destroy DNA.
3. **Add 1 ml (scant 1/4 t.) detergent and mix gently every 1/2 minute for 5 minutes. Try not to create foam.** Both Woolite and Lemon Fresh Joy work well. The detergent will break down the cell and nuclear membranes in the wheat germ, releasing the DNA.
4. **If you generated a lot of foam, use a folded paper towel to absorb it.** Foam will interfere with the precipitation step.
5. **Tip the test tube at an angle. SLOWLY pour 14 ml (@1 T.) of rubbing alcohol or 95% ethanol down the side so that it forms a layer on top of the water/wheat germ/detergent solution. Do not mix the two layers together.** The alcohol precipitates the DNA out of solution, separating it from the other cell components. DNA is soluble in water but not in alcohol.
6. **White, stringy or filmy DNA will appear at the interface of the two layers.** DNA stands for deoxyribonucleic acid. It makes up our chromosomes and contains the "blueprint for life."
7. **Use a wooden stick (shish kebob skewer) or a glass hook to collect the DNA (gentle twirling may help).**
8. **If you want to keep the DNA, store it in more rubbing alcohol (or 50% alcohol) in a sealed tube or jar or air dry it on paper.**

T. = Tablespoon

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