



DNA Extraction from Blood

Outline

1- Introduction

2-The purpose of extracting DNA

3-principle of DNA Extracting

4-Method that we will use in this lab

Introduction

- The genomes of almost all organisms are DNA, the only exceptions being some viruses that have RNA genomes.
- Genomic DNA molecules constitutes the total genetic information of an organism.
- They are generally large, and in most organisms are organized into DNA–protein complexes called chromosomes.

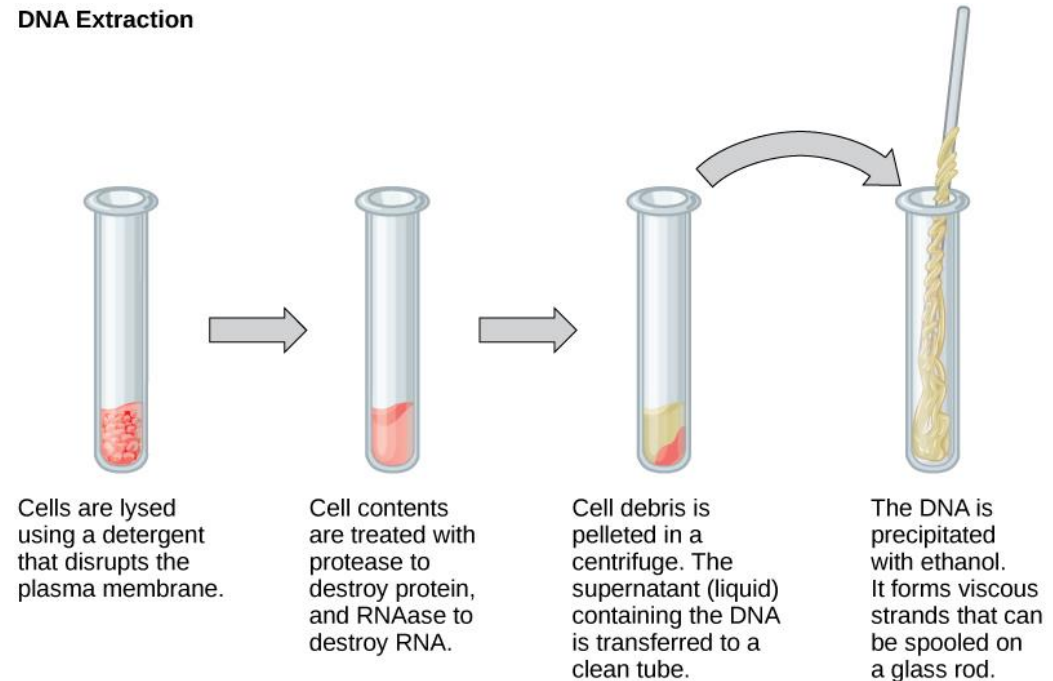
DNA Extraction

- Studying DNA is very important, which aids in disease prevention, diagnosis and treatment.
- The first step to study DNA is to do extraction !!
- If you want to study the genetics of Alzheimer disease for example, From where do you think DNA should be extracted?

DNA Extraction

- Many different methods and technologies are available for the isolation of genomic DNA from blood
- All are have general principle
- In Blood DNA is found incells

DNA Extraction



Principle

- Blood Sample collection (EDTA containing tube)

Red Blood
cell lysis

Removing
RBC cell

WBC lysis
ethylenediaminetetra
acetic acid (EDTA)
Detergent eg.
sodium dodecyl
sulfate

Removing
proteins
and lipids

DNA collecting
by ethanol
precipitation

DNA purity
measurement

Method:



3 ml of blood

12 ml reagent A, (red blood cell lysis solution)
320 mM sucrose,
triton, Tris-HCl pH 7.4

Centrifuge



Remove supernatant
Then add reagent B (
cell lysis solution)
SDS, EDTA, Buffer)

Add high concentration
of salt (salting out)



Chloroform
Then put it in
shaker



Chloroform

Polar layer

Centrifuge



Polar layer

Chloroform



Polar layer



Ice cold ethanol

DNA Quality and Quantity

DNA Quality and Quantity

- After extraction, DNA integrity must be checked.

