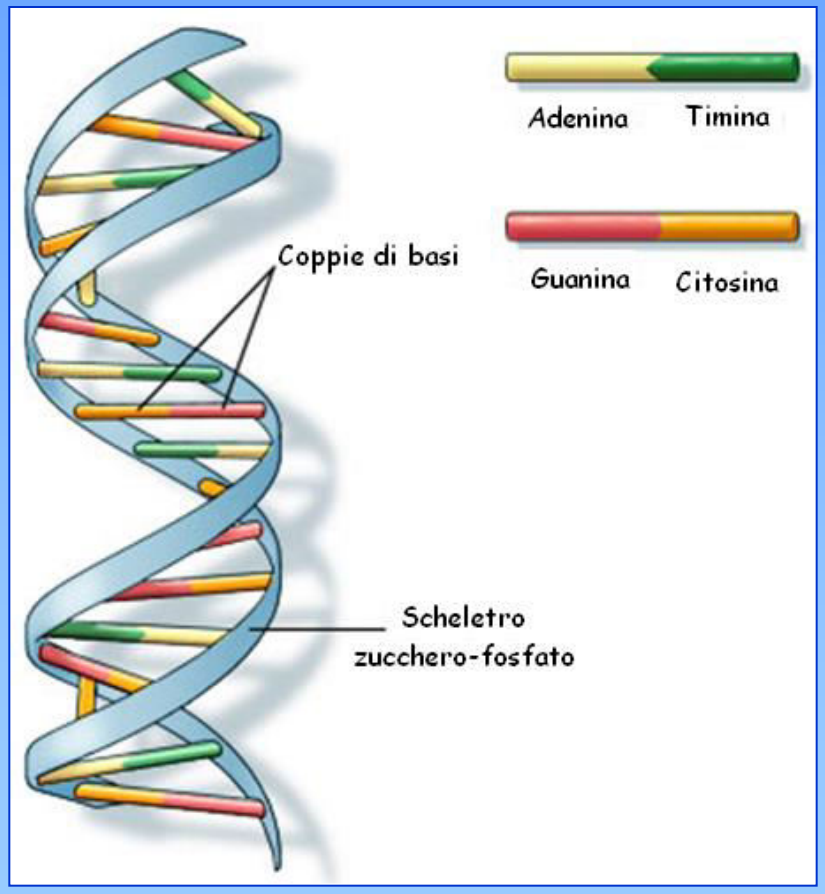
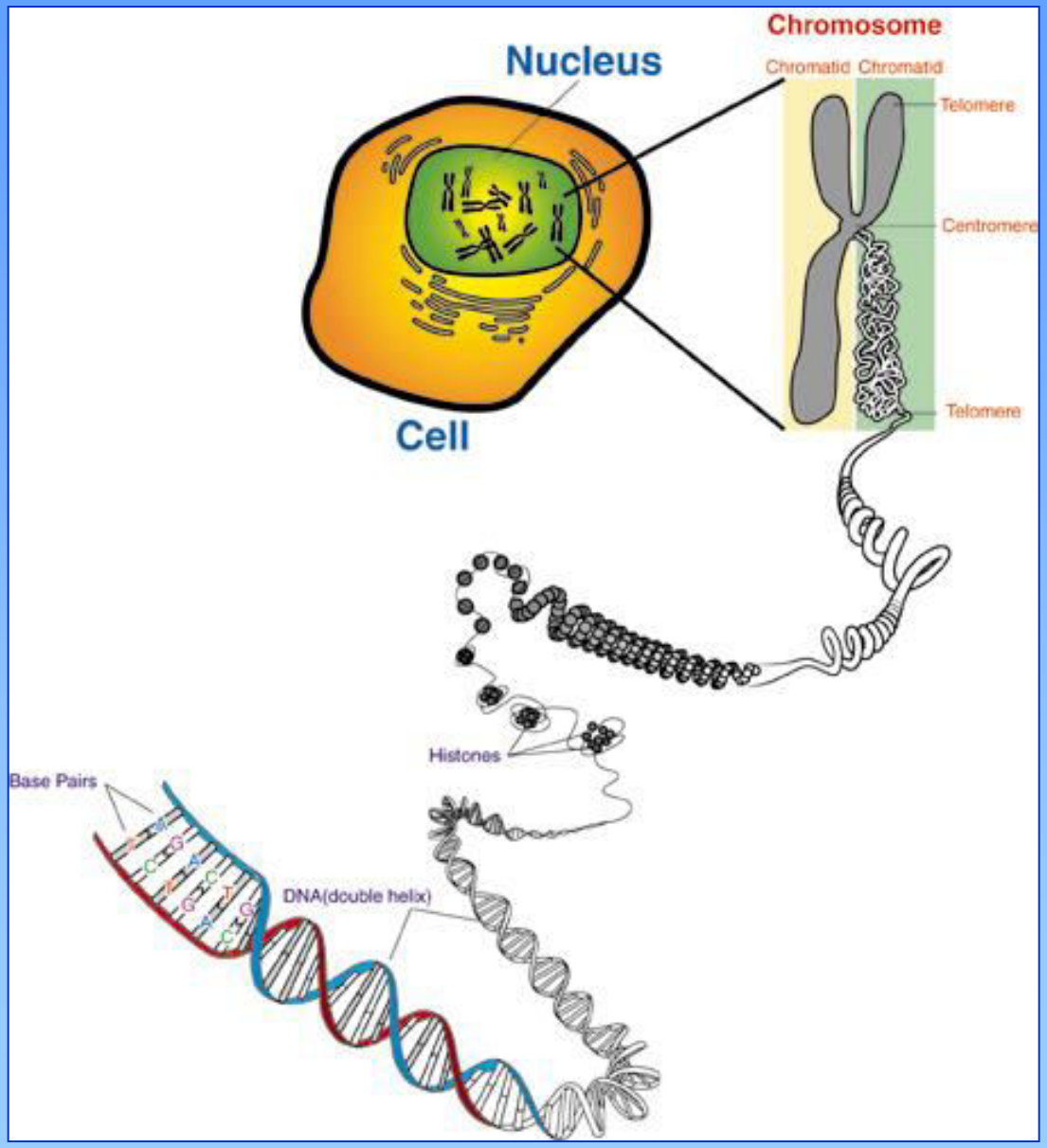
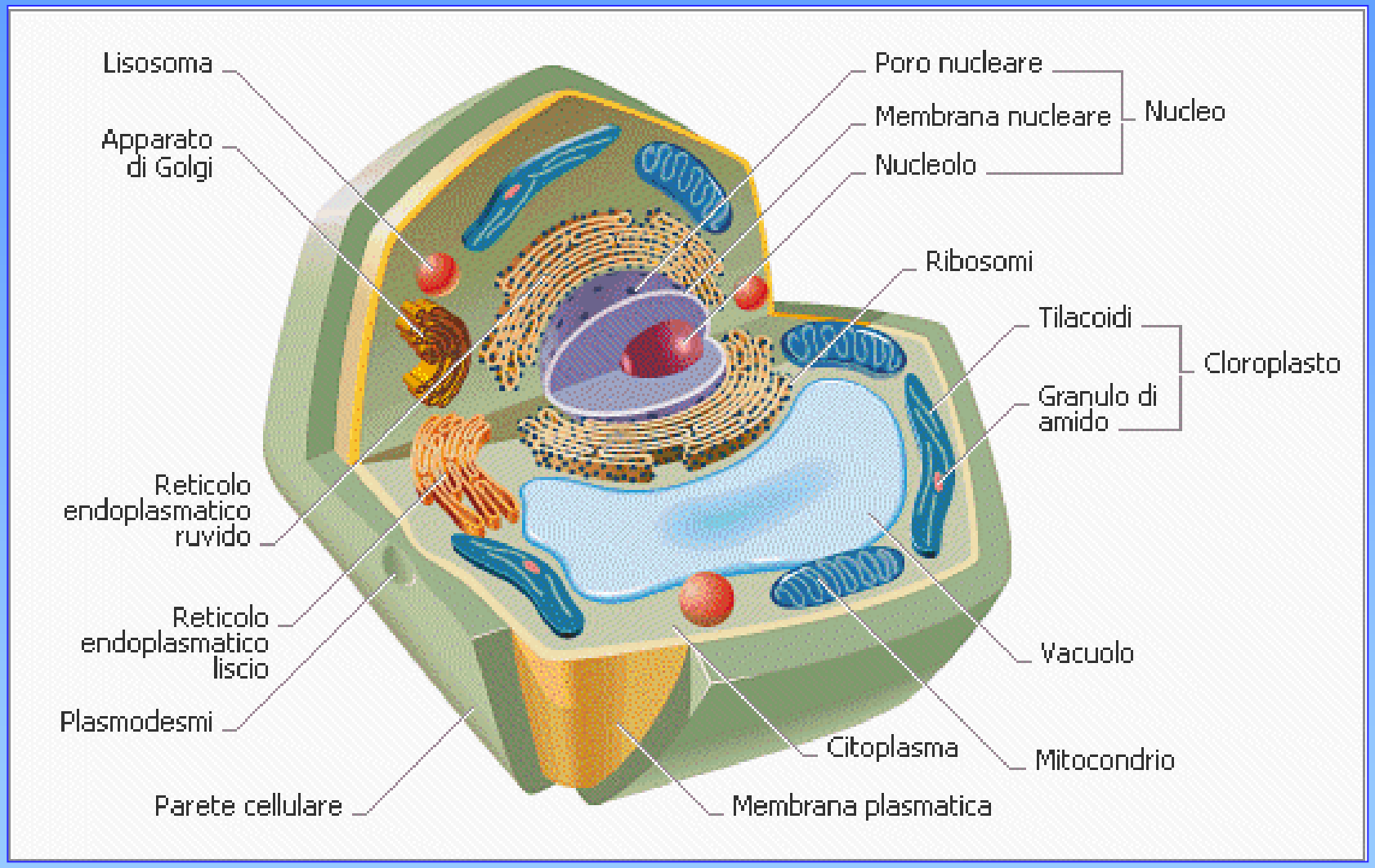
IL DNA: LA MOLECOLA DELLA VITA



Estrazione del DNA da campioni biologici




Lisosoma
Apparato di Golgi
Reticolo endoplasmatico ruvido
Reticolo endoplasmatico liscio
Plasmodesmi
Parete cellulare
Poro nucleare
Membrana nucleare
Nucleolo
Nucleo
Ribosomi
Tilacoidi
Granulo di amido
Cloroplasto
Vacuolo
Citoplasma
Mitocondrio
Membrana plasmatica

Tagliare il campione biologico e ridurlo in poltiglia

Versare nel becher ed aggiungere acqua e cloruro di sodio

25 mL

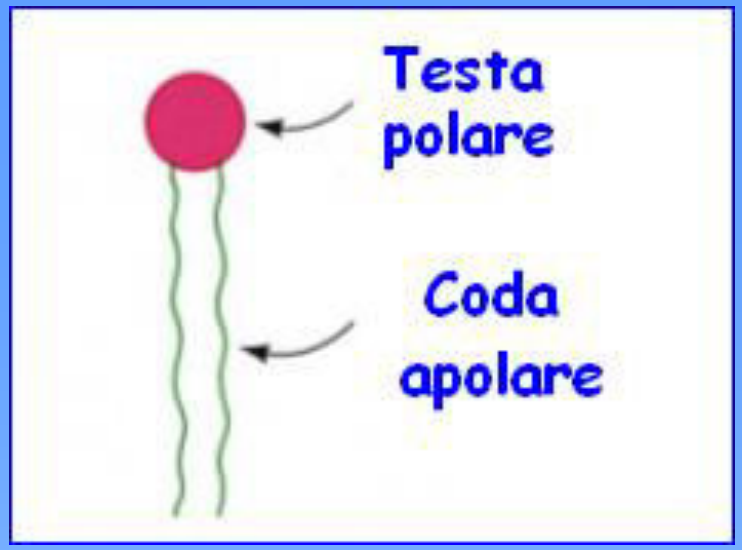
3 g

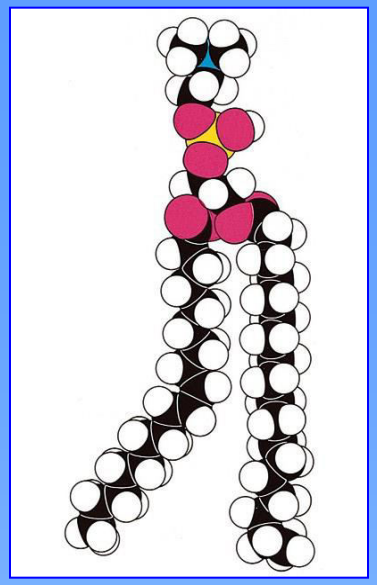
Passare il campione al frullatore

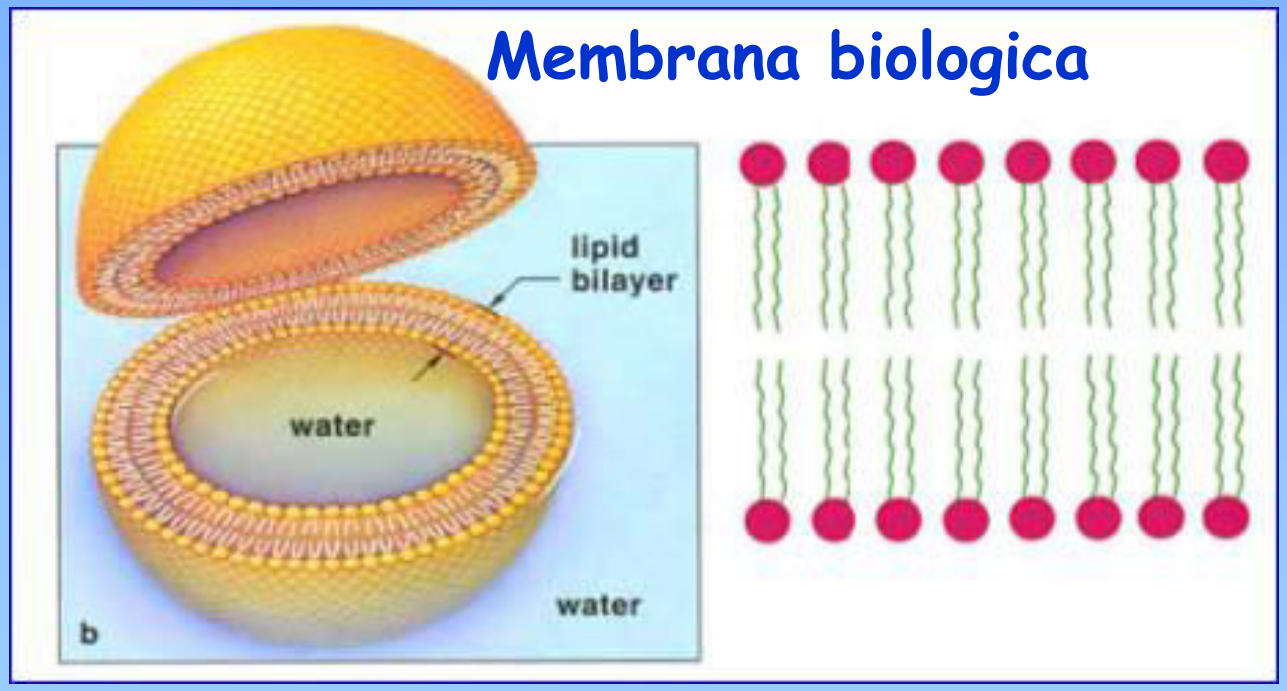
Aggiungere il sapone liquido per i piatti

(tensioattivo anionico)

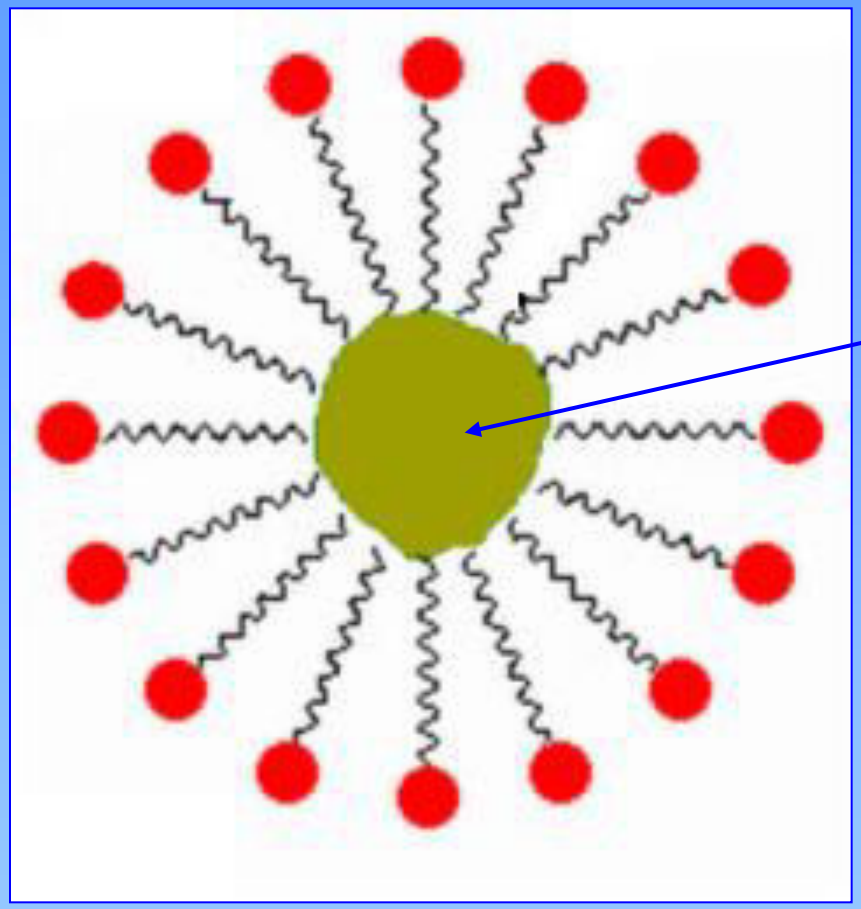
Sapone liquido







Doppio strato fosfolipidico



Particella di grasso

Micella

Il tensioattivo determina la dissoluzione delle membrane biologiche

Il calore inibisce le DNAasi, ma potrebbe denaturare il materiale genetico

Filtrare il campione con colino o carta da filtro

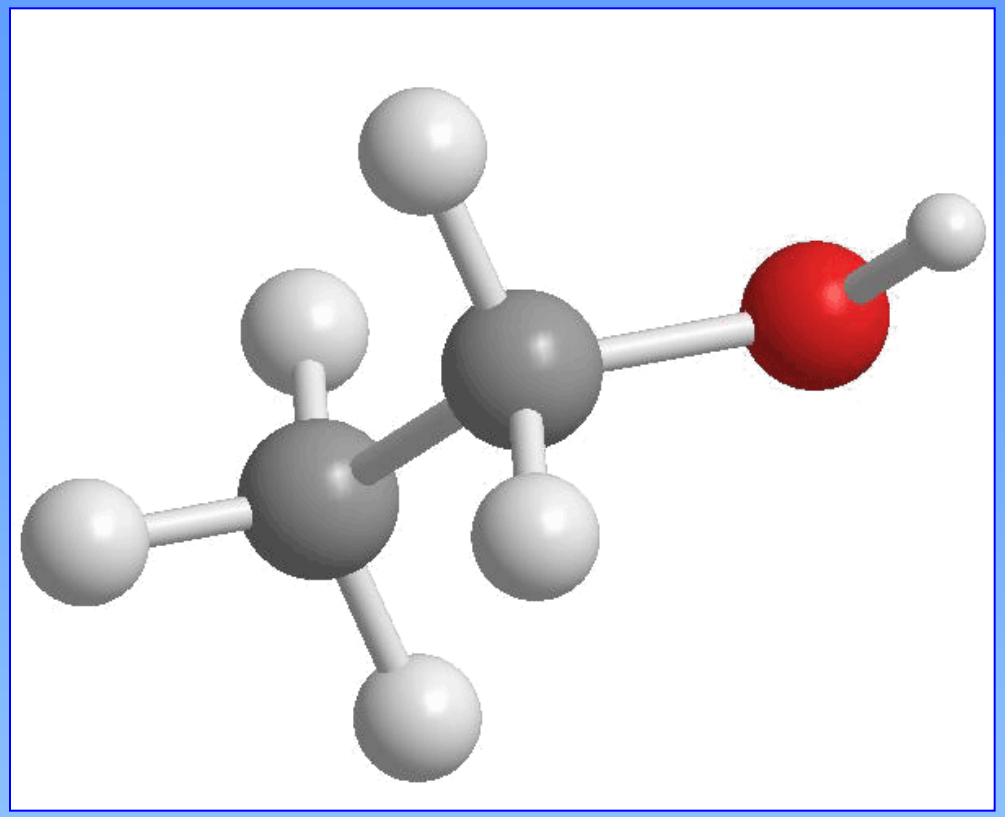
Imbuto con carta da filtro

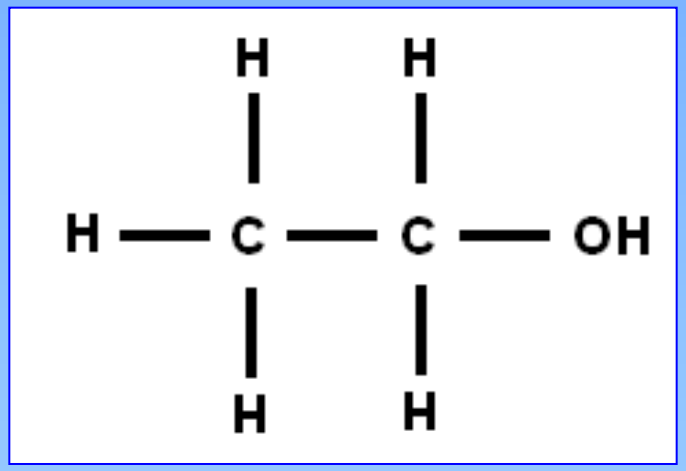
Filtrato acquoso

Alcol etilico

Filtrato

Aggiungere al filtrato 2,5 mL di alcol etilico





ETANOLO: C_2H_5OH

I due liquidi si stratificano a causa della loro differente densità

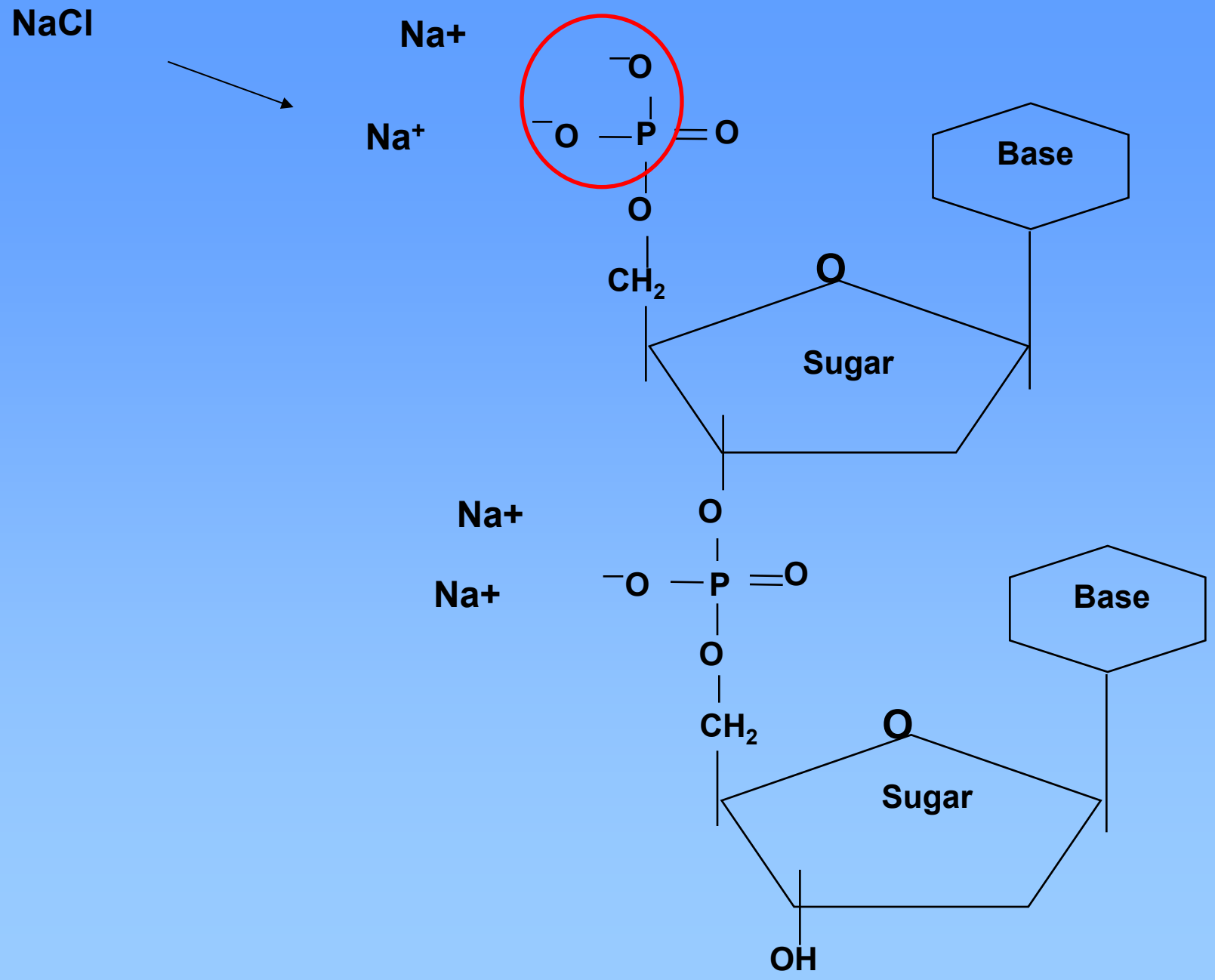
Alcol etilico (meno denso)

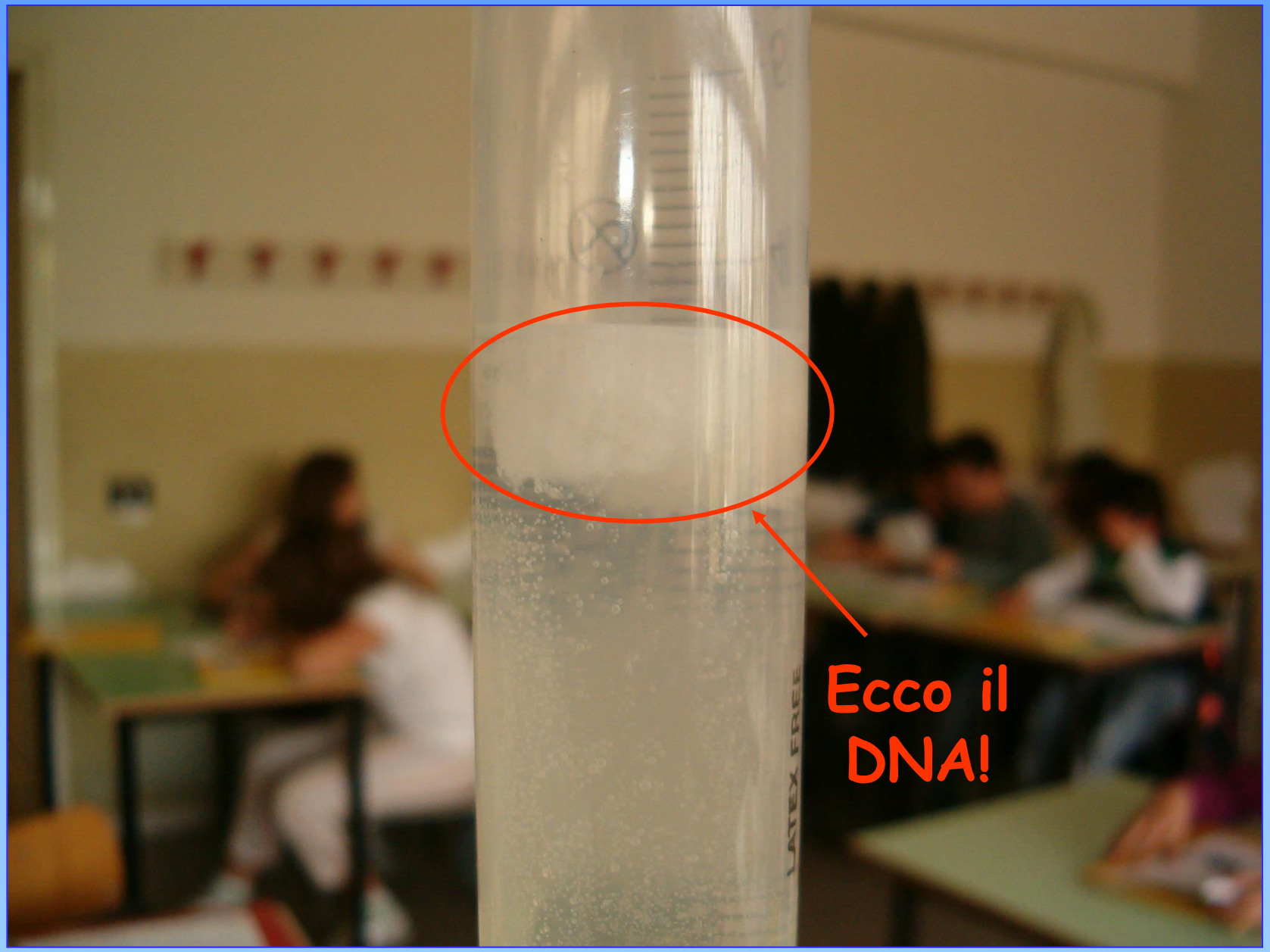
$\rho = 0{,}791\ g/cm^3$

Filtrato (più denso)

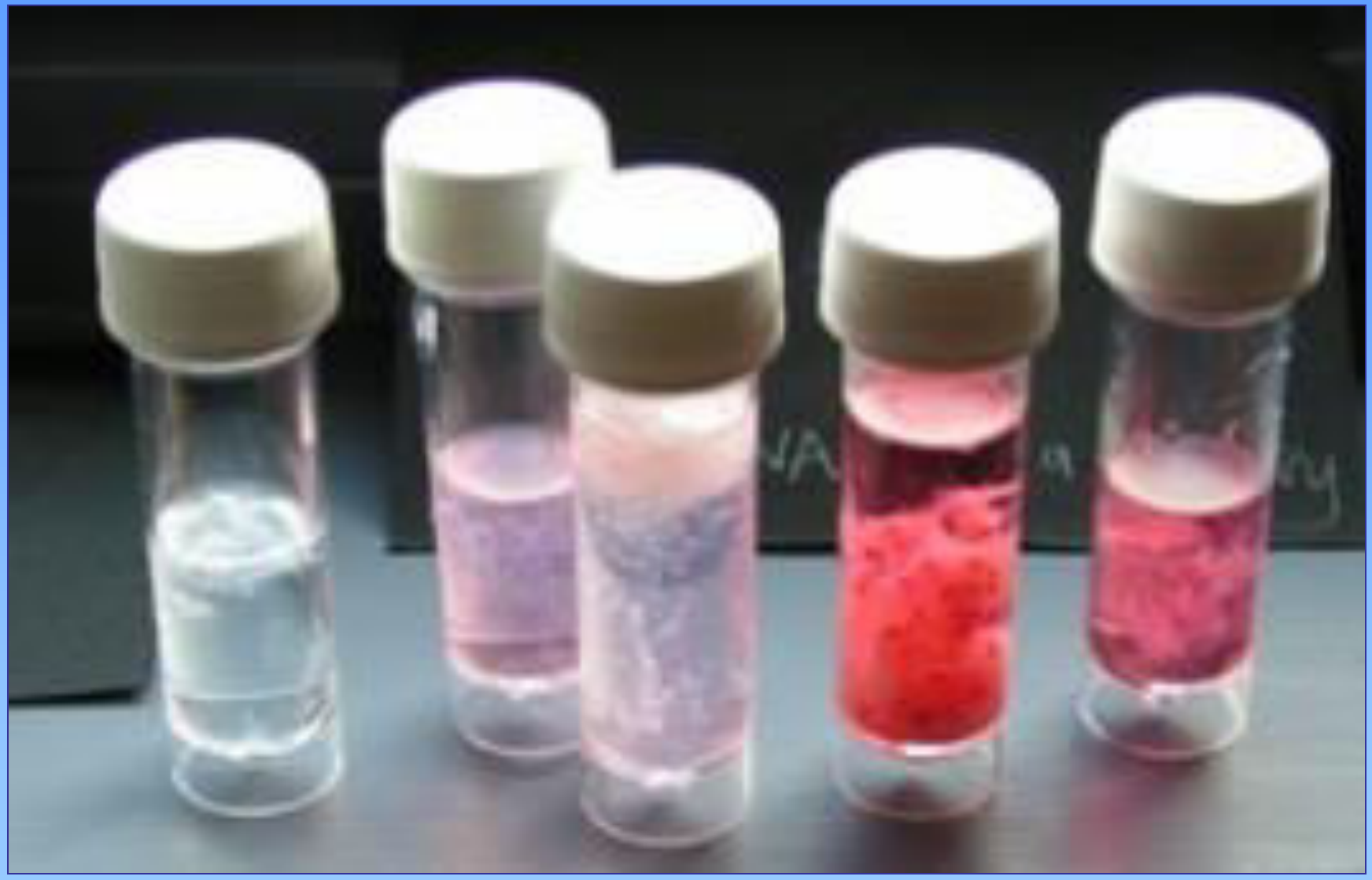
$\rho > 1\ g/cm^3$

All'interfaccia tra i due liquidi comincia ad accumularsi il materiale genetico

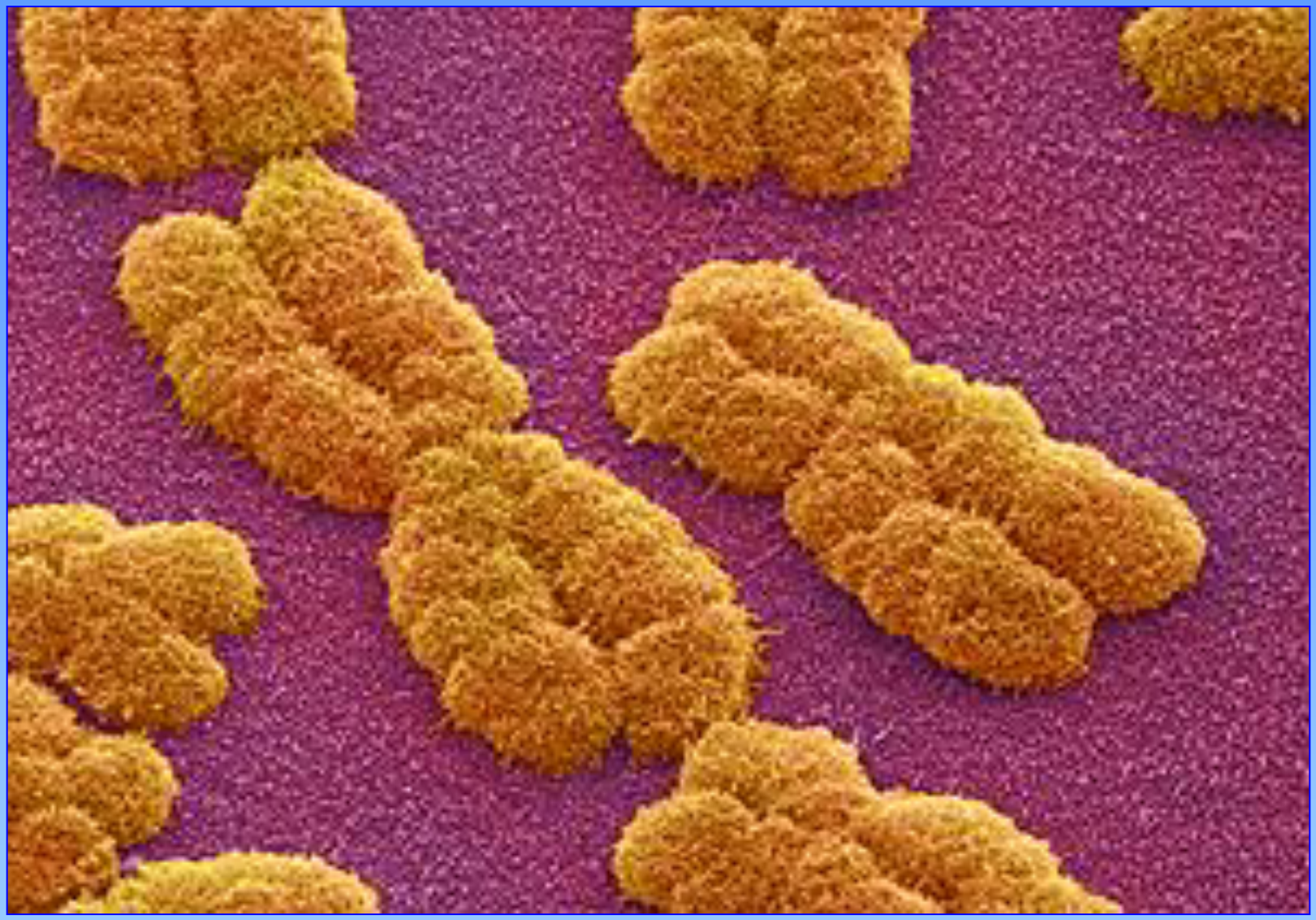

NaCl
Na+
Na+
⁻O
⁻O
P
O
O
CH2
O
Base
Sugar
Na+
Na+
O
⁻O
P
O
O
CH2
O
Base
Sugar
OH


LATEX FREE
Ecco il
DNA!

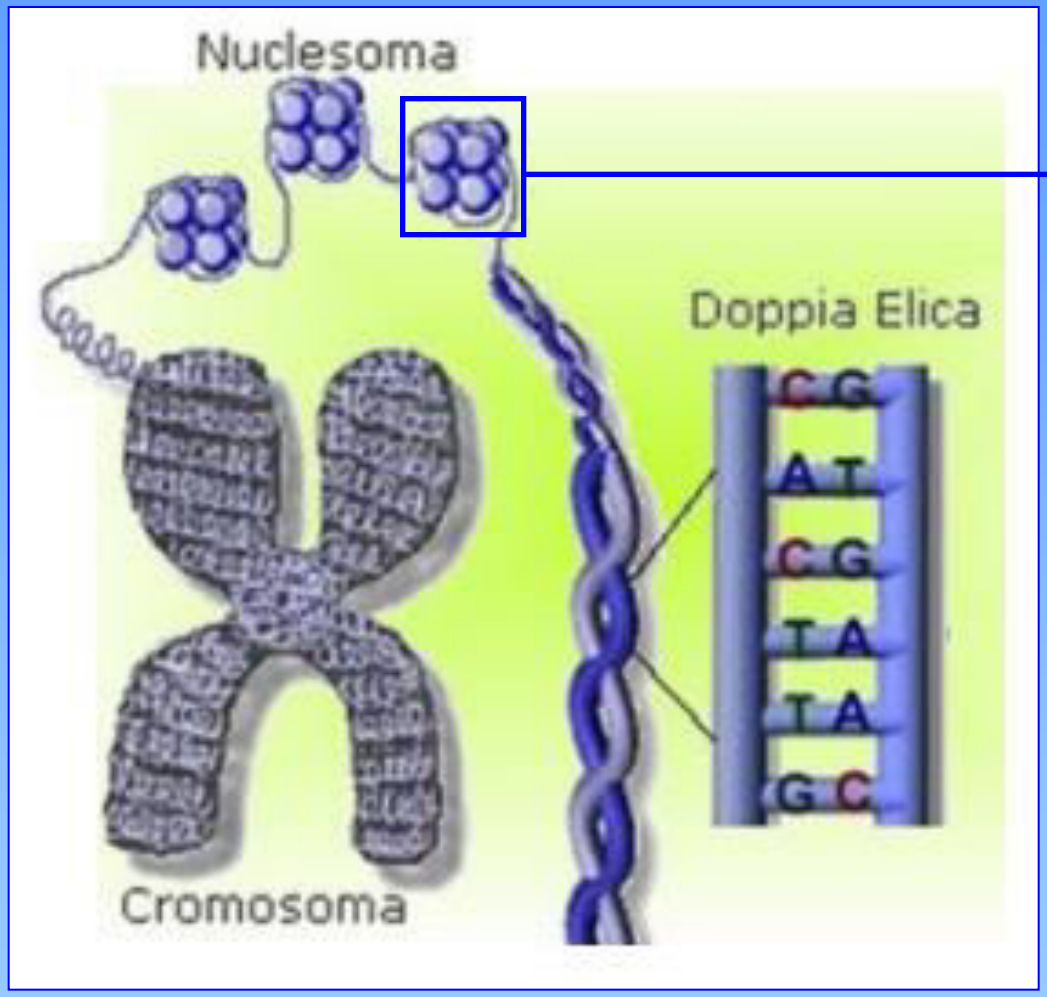
DNA

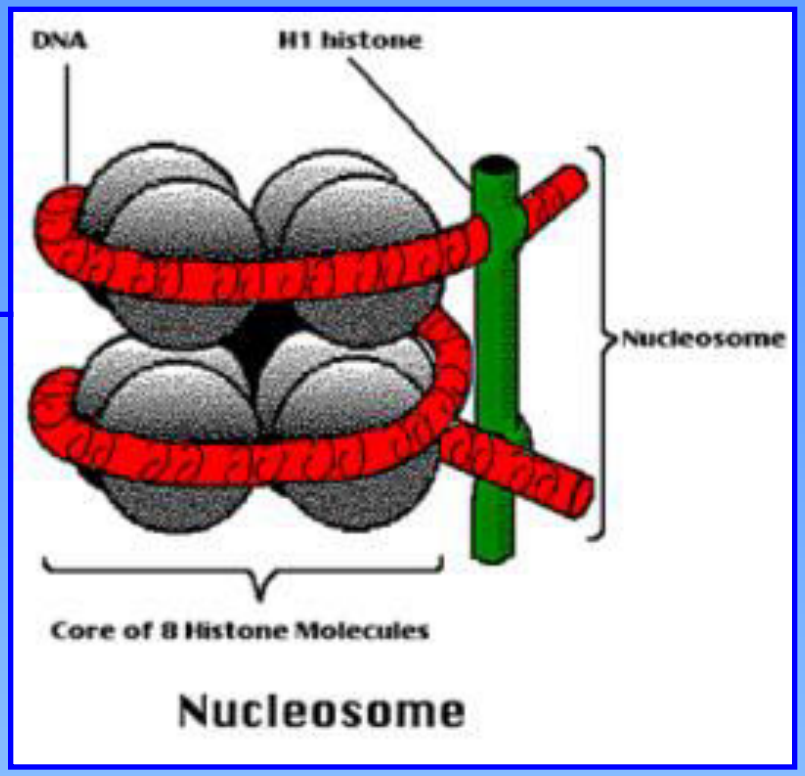


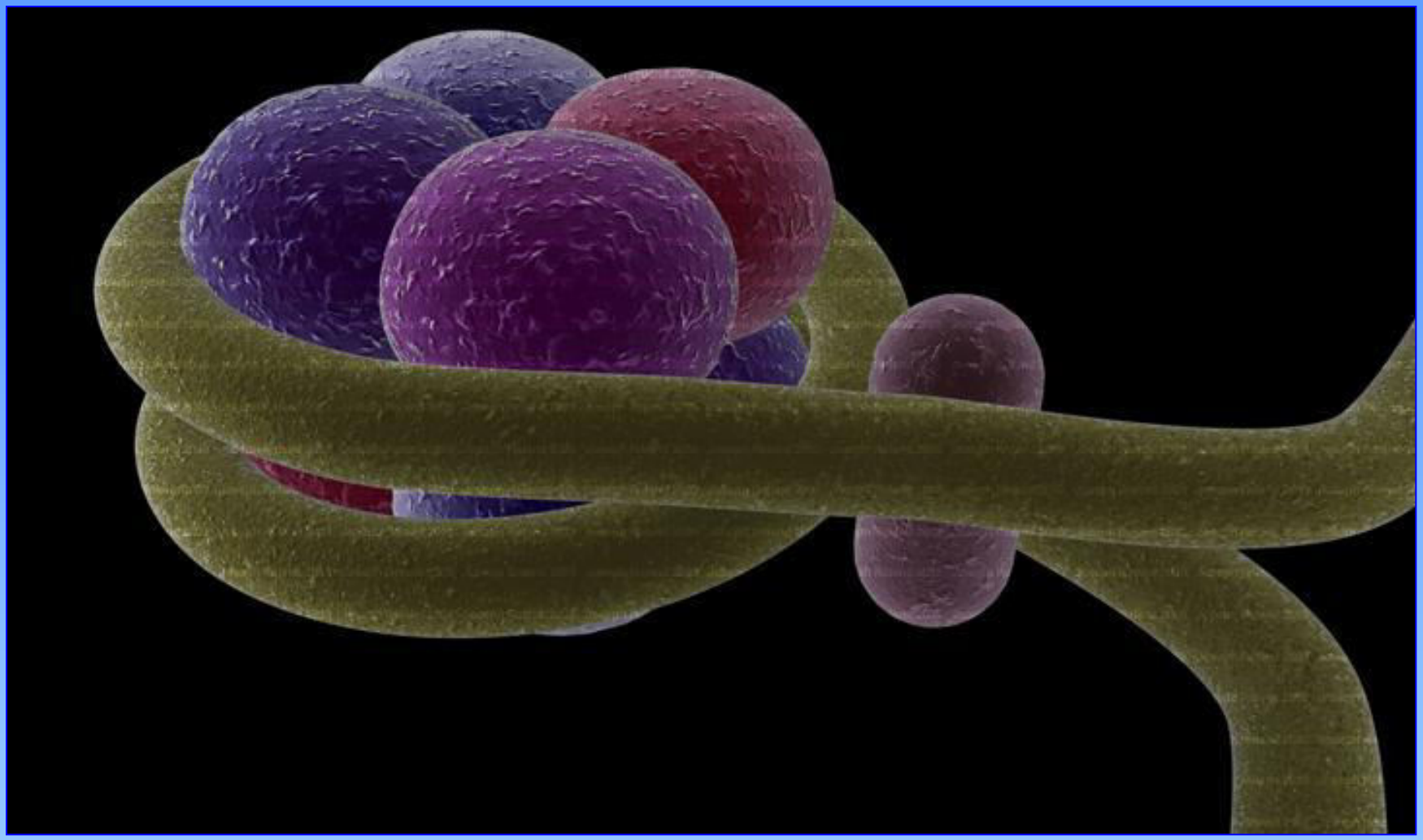
La bromelina contenuta nel succo di ananas ha proprietà proteolitiche



Cromosomi al microscopio elettronico a scansione

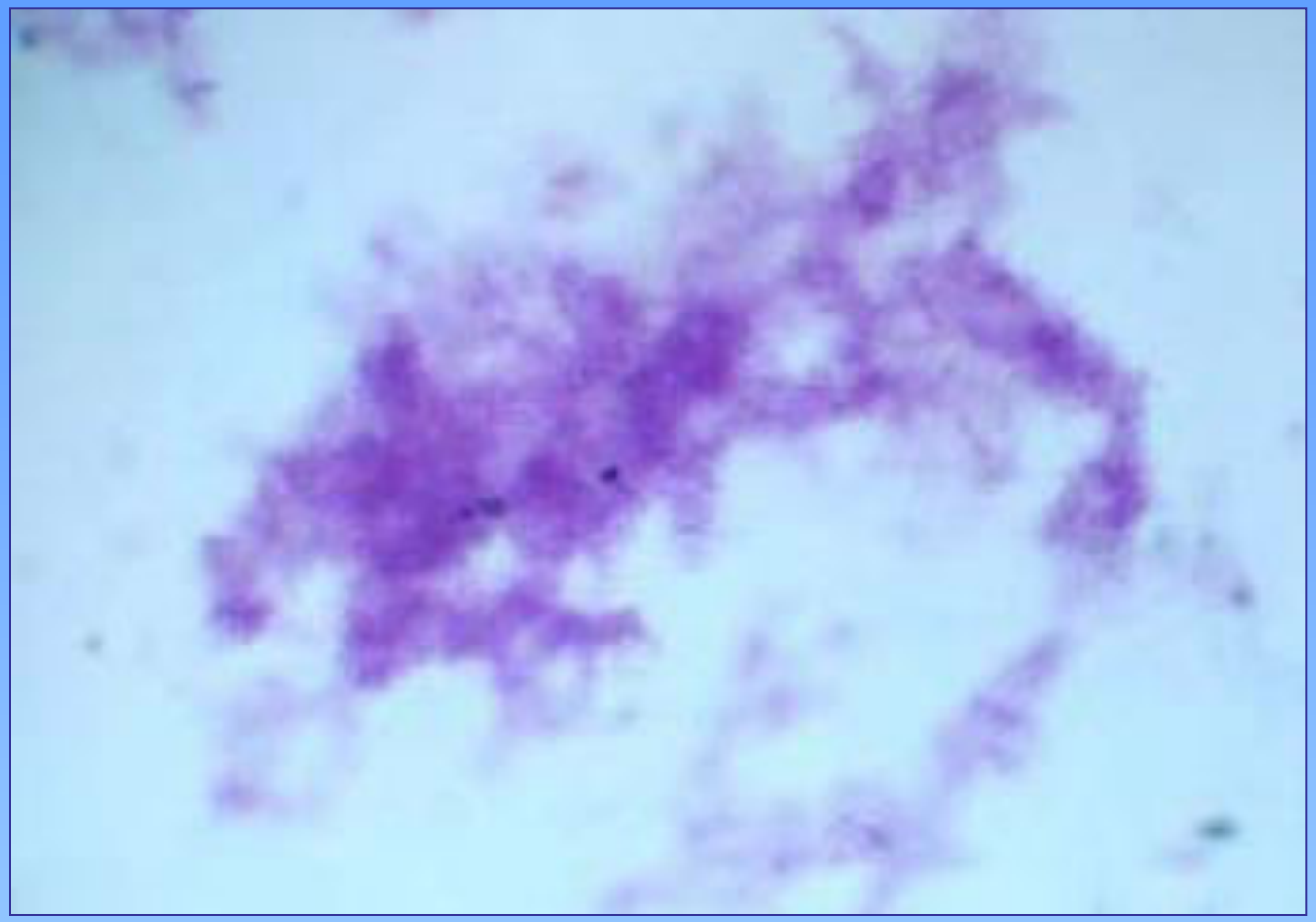

Nuclesoma
Doppia Elica
C G
A T
C G
T A
T A
G C
Cromosoma


DNA
H1 histone
Nucleosome
Core of 8 Histone Molecules
Nucleosome



Nucleosoma al microscopio elettronico a scansione

E' possibile pescare il DNA e vedere la sensazione al tatto



Colorare il DNA con Blu di Metilene ed osservarlo al microscopio