



CCST 9060 Longevity Venture Capital Pitch

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Rundown

1. Introduction
2. Introductory video
3. Explanation
 - 3.1 DNA analysis (genetic factor)
 - 3.2 Nutrition (environment factor)
4. Target population and ethical considerations
5. Poster



1. Dear LKS Investors,


Product name : “**WATCHING YOU**”

Product type: smart watch




2. Introductory Video





3.1 Explanation - DNA analysis

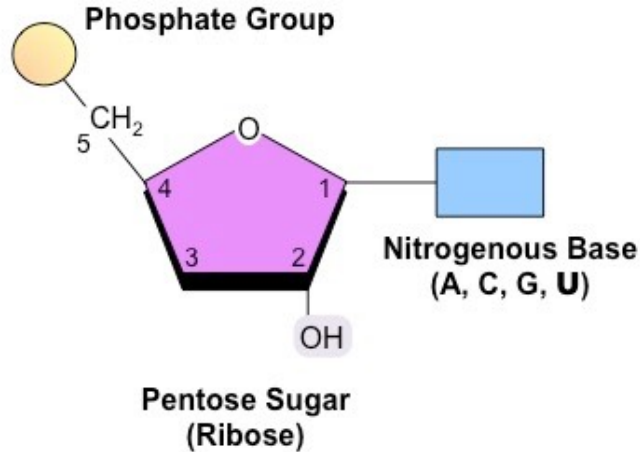


Background knowledge

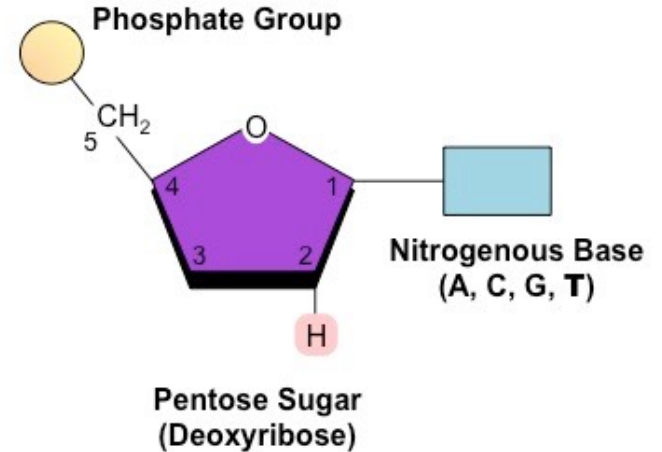
- ❖ Genome: the whole of the genetic information of an organism
- ❖ Genetic code: the set of rules that translate information encoded within genetic material into proteins
Eg. CUU codes for Leucine; AAU codes for Lysine
- ❖ Genome is unique but genetic code is universal

What is gene sequencing?

It is the process of determining the precise order of nucleotides (bases: A,T,C,G) within a DNA molecule.



RNA Nucleotide



DNA Nucleotide

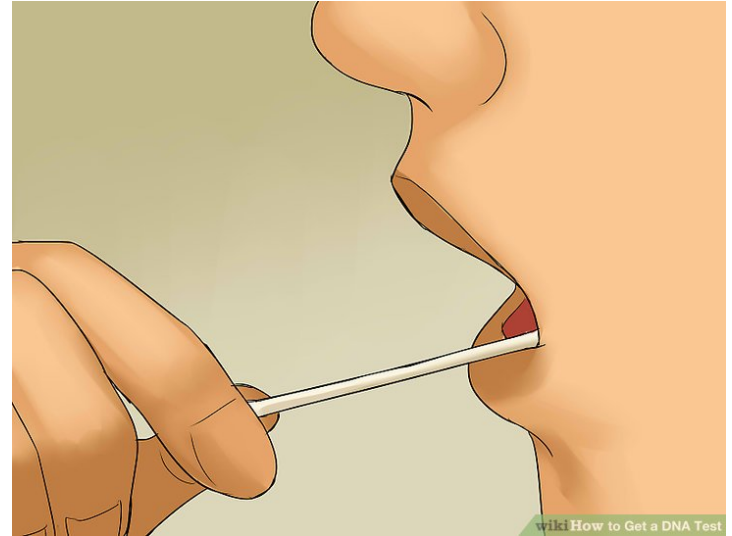
Gene sequencing

1. The Polymerase Chain Reaction (PCR)
2. Addition of dideoxynucleotides (ddNTPs)
3. Gel electrophoresis

Mechanism of gene sequencing

Step 1: PCR - a cycle of reactions uses variations in temperature to control the replication process

1. Take a DNA sample



Mechanism of gene sequencing

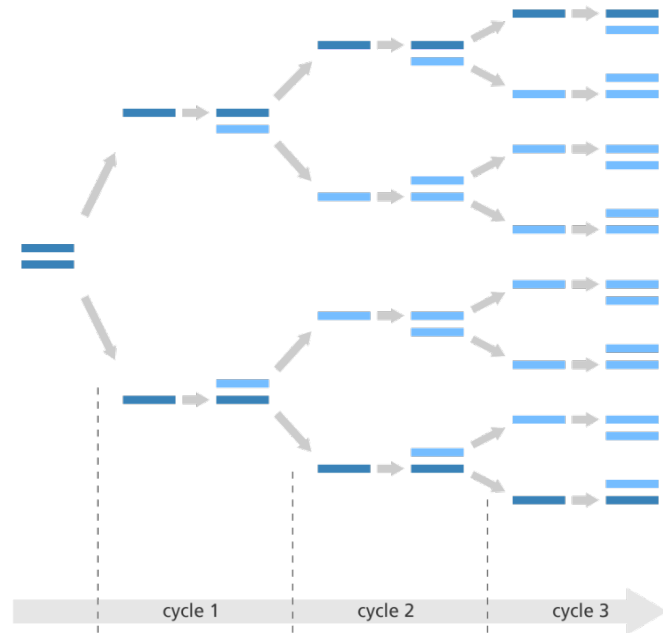
Step 1: PCR - a cycle of reactions uses variations in temperature to control the replication process

2. Use PCR to amplify the sample

2.1 Denaturation ($\sim 90^{\circ}\text{C}$)

2.2 Annealing ($\sim 55^{\circ}\text{C}$)

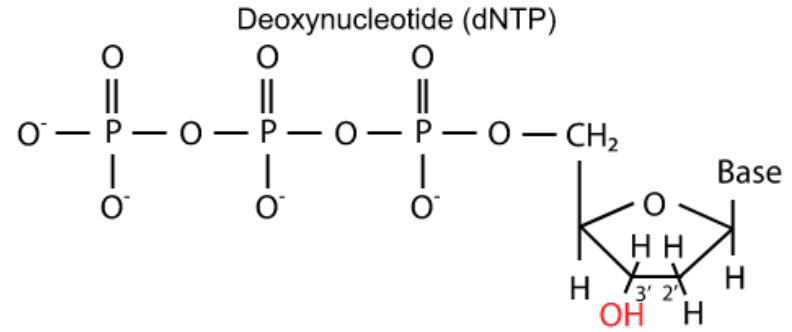
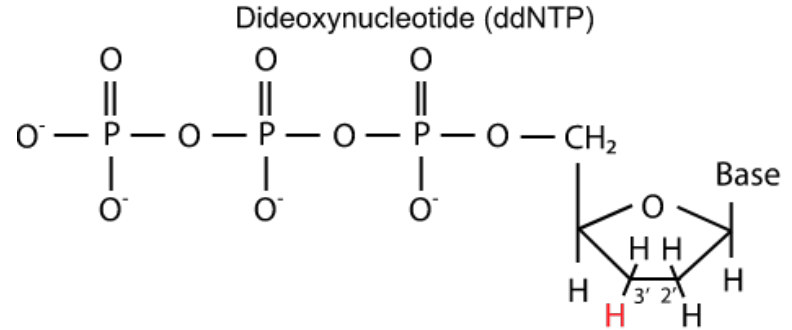
2.3 Elongation ($\sim 75^{\circ}\text{C}$)



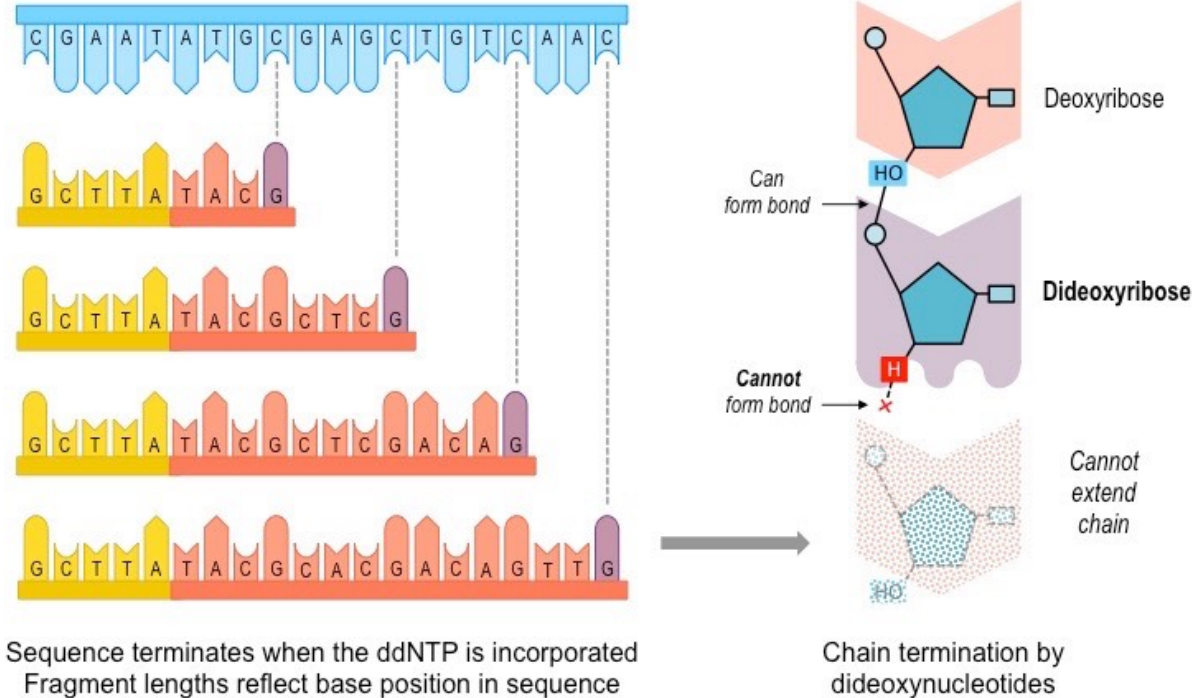
Mechanism of gene sequencing

Step 2: Adding ddNTPs

- ddNTP lacks the 3' hydroxyl group (-OH)
Necessary for forming a phosphodiester Bond
- As a result, strand elongation terminates



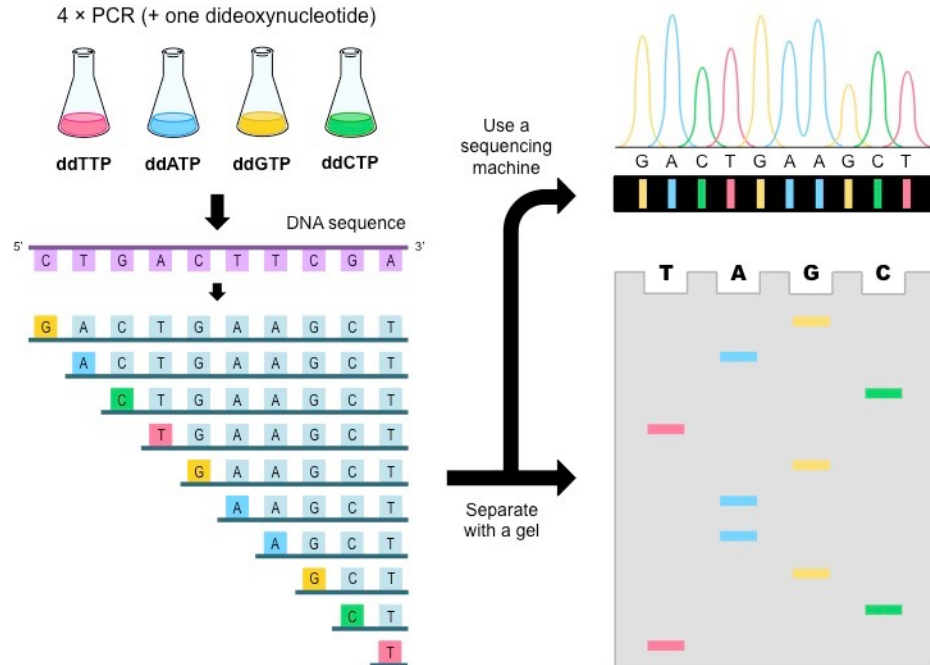
Determining nucleotide positions using ddNTPs



Mechanism of gene sequencing

Step 3: Gel electrophoresis - separates the strand by size

1. Set up 4 PCR mixes, each containing stocks of Normal nucleotides + 1 ddNTP (ddA, ddT, ddC, ddG)
2. Use gel electrophoresis to separate fragments
3. Order fragments according to lengths
4. Determine base sequence



Why should we sequence our genomes?

Advantages regarding human longevity

→ Identify genetic predisposition to disease

→ Personalised treatment and nutrition

3.2 Explanation - Nutrition

How nutrition relates to longevity

“We are what we eat”

Food fuels the body. If fueled with bad stuff, the body goes faulty quickly.



Healthy way of eating?

Eat plants

Food is better than supplements
calories

Liquid also have

Let 90-95% of your food to be fruits, vegetables, grains, beans

Retreat from Meat Limit alcohol

Take your time to eat

Eat healthy fish. If fish is

Too difficult? Too

Proteins are good for muscles.

Diminish dairy.

Do

Avoid processed food.

Eat beans regularly.

hard to

Follow the food

accomplish?

Cut sugar.

Eat vegetables.

Don't eat too much egg yolks and
entails.

Make nuts your snack.

Don't eat too much before going to bed.

Drink mostly water.

Use vegetable oils

Maintain

balanced diet.

Eat variety of foods.

Don't be picky.

Choose low fat products.

Be cautious of portions.

Avoid animal oil.

Avoid instant foods.

Quality is important than quantity.

Eat fresh.

The Feature :

Allowing them to make smarter choices for their own needs

Smarter and more accurate :

Balanced ratio
Calorie and nutrition fact
accurately calculated

Keep record of what you ate

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%

More delicious :

Suggested meal plans
according to preference



Just for you :


Suggest people to make
Healthier options

customized diet


Keep in update with how the
body react to the food

Customize

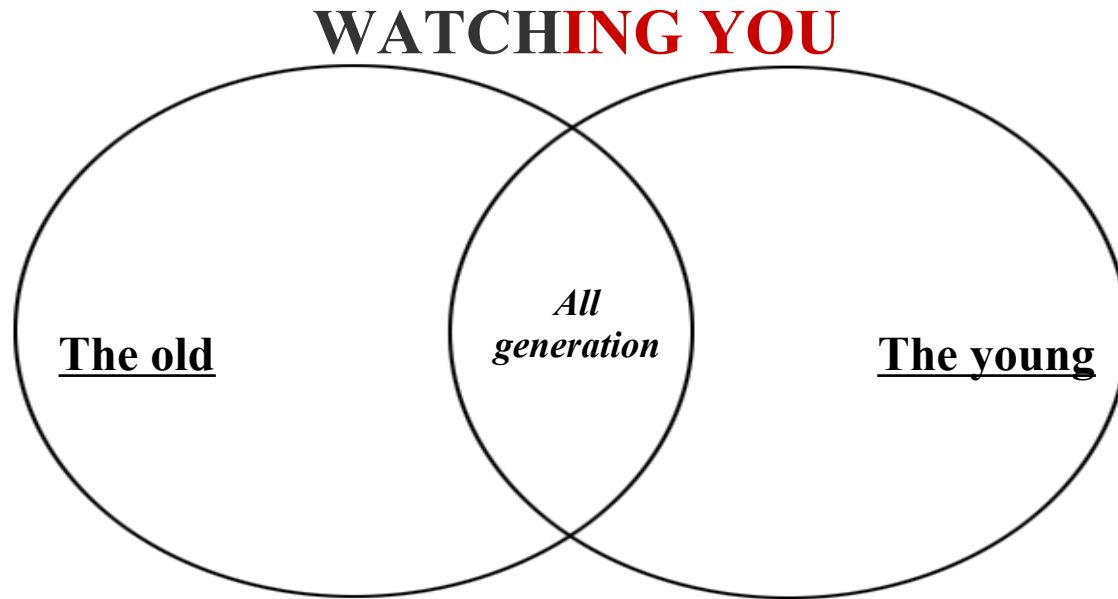




4. Target population and Ethical consideration



Target Population



Ethical consideration

1. Privacy Concerns

- GPS & wireless (watch apps)
- Bluetooth (Android and IOS)
- Fingerprint Unlocking Function

1. Restriction on people making choices for themselves



5. Poster

Longevity Watch

15:30



Apr 04

1. DNA Analysis
(Gene Sequencing)
2. Nutrition needs
(Grocery shopping)
3. Meal Time Alarm



Bluetooth : Mobile App

Target Population: Elderly

Watching

You

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Division of Labour

Student	Contribution
Stella (UID:3035493581)	Introductory video Target population
Cobby (UID: 3035444542)	Genetics part
Lucy (UID: 3035453751)	Nutrition part
Karrie (UID:3035456002)	<ul style="list-style-type: none">- Ethical considerations- Poster



Thank you for listening!

