
Human Genome and Origin of Mitochondria

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Abstract: *It had been believed that when individual eukaryotic cells engulfed aerobic and photosynthetic bacteria, the bacteria became endosymbionts with the phagocyte and evolved into mitochondria and chloroplasts respectively. The key objective of this study is to prove that the **Endosymbiotic Theory** about the origins of mitochondria and chloroplasts is a misleading **lie**, being ridiculously laughable. Each of the micrographs or videos in the Figures, and each of the concrete evidences listed were designed to have targetful aims. The micrographs, videos, and concrete evidences were devised to serve as addressive findings (results). The human mitochondrial DNA is a transcript obtained when two separate spliced or mature RNAs (of DNA type) transcribed from the nuclear **Genome** of human oocyte have annealed into double-stranded transcript and exported into the cytoplasmic organelle called mitochondrion (plural, mitochondria) that mainly performs the task of producing energy (**ATP**) to power the genomic reactions of the cell. **Lynn Margulis's Endosymbiotic Theory** which stated that mitochondrion & chloroplast found in eukaryotic cells had evolved from bacteria when they were engulfed by eukaryotic cells, was a misleading **lie** that would had been ridiculously laughable!!!!*

Key Words: Endosymbiotic theory, Mitochondria, ATP, Mitochondrial DNA, Chloroplasts, Splicing, Annealing, Transcript

INTRODUCTION

It had been believed that when individual eukaryotic cells engulfed aerobic and photosynthetic bacteria, the eukaryotic host cells and bacteria formed endosymbiotic relationships long ago. Through millions of years of evolutions, the aerobic bacteria became mitochondria and the photosynthetic bacteria became chloroplasts [1].

The key objective of this study is to prove that the **Endosymbiotic Theory** about the origins of mitochondria and chloroplasts is a misleading **lie**, being ridiculously laughable.

METHODOLOGY AND RESULTS

Each of the micrographs or videos in the Figures, and each of the concrete evidences listed or displayed herebelow has a targetful aim. These micrographs, videos, and concrete evidences are also addressive findings (results) in the targetful approach of the paper and this is the reason for why it is entitled as **Methodology and Results** hereabove.

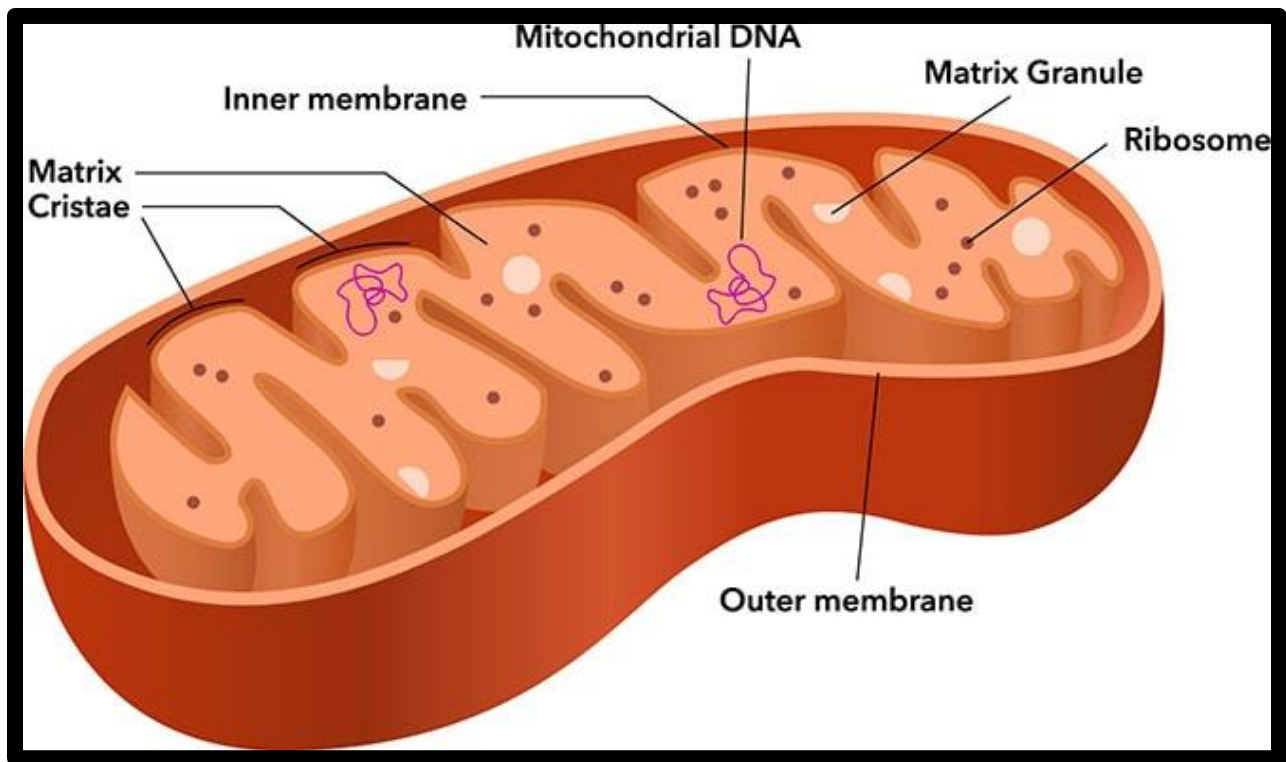


Figure 1: The basic structure of a mitochondrion [2].

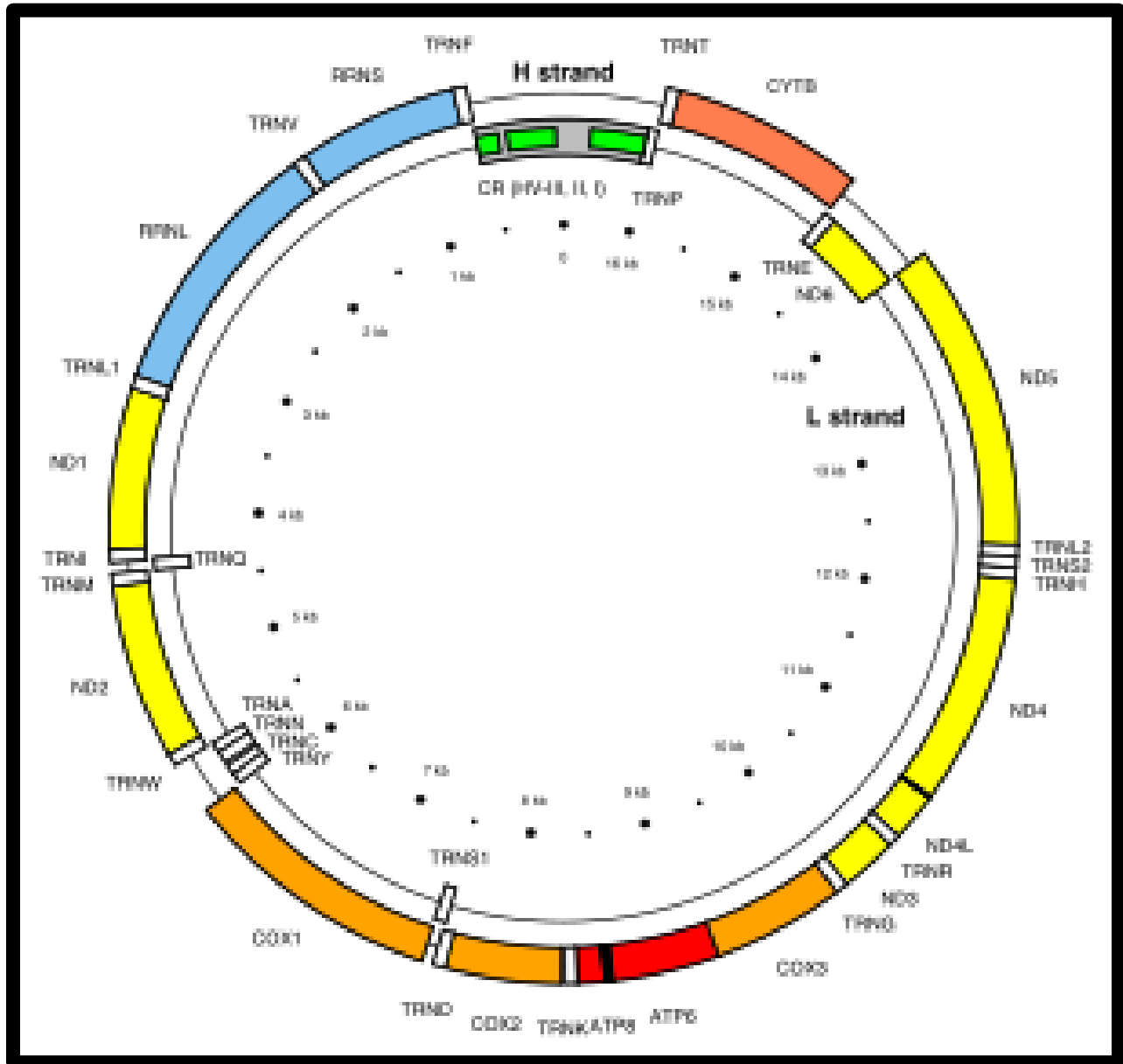


Figure 2: Morphology of human mitochondrial DNA which is actually a double-stranded transcript transcribed from the nuclear **Genome** of mother.

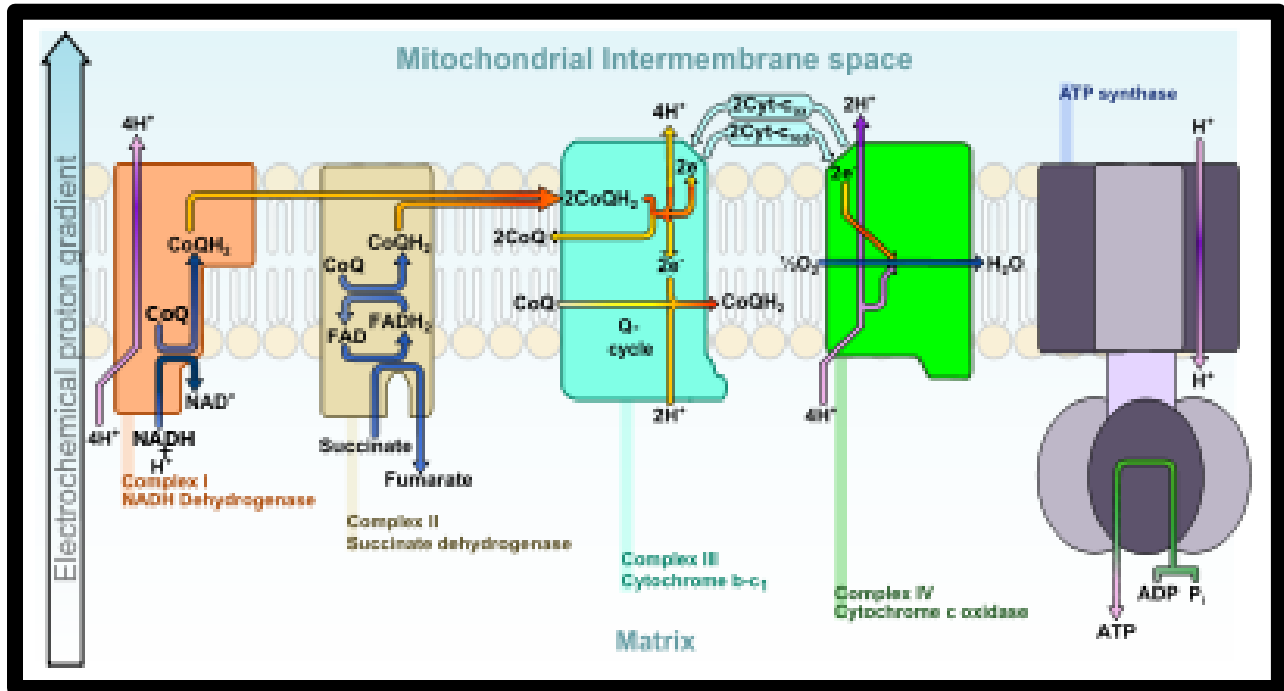


Figure 3: Oxidative phosphorylation and Electron transport chain in the mitochondrial intermembrane space [2].

The electron transport chain is a series of four protein complexes that couple redox reactions, creating an electrochemical gradient that leads to the creation of ATP in a complete system named oxidative phosphorylation. It occurs in mitochondria in both cellular respiration and photosynthesis.

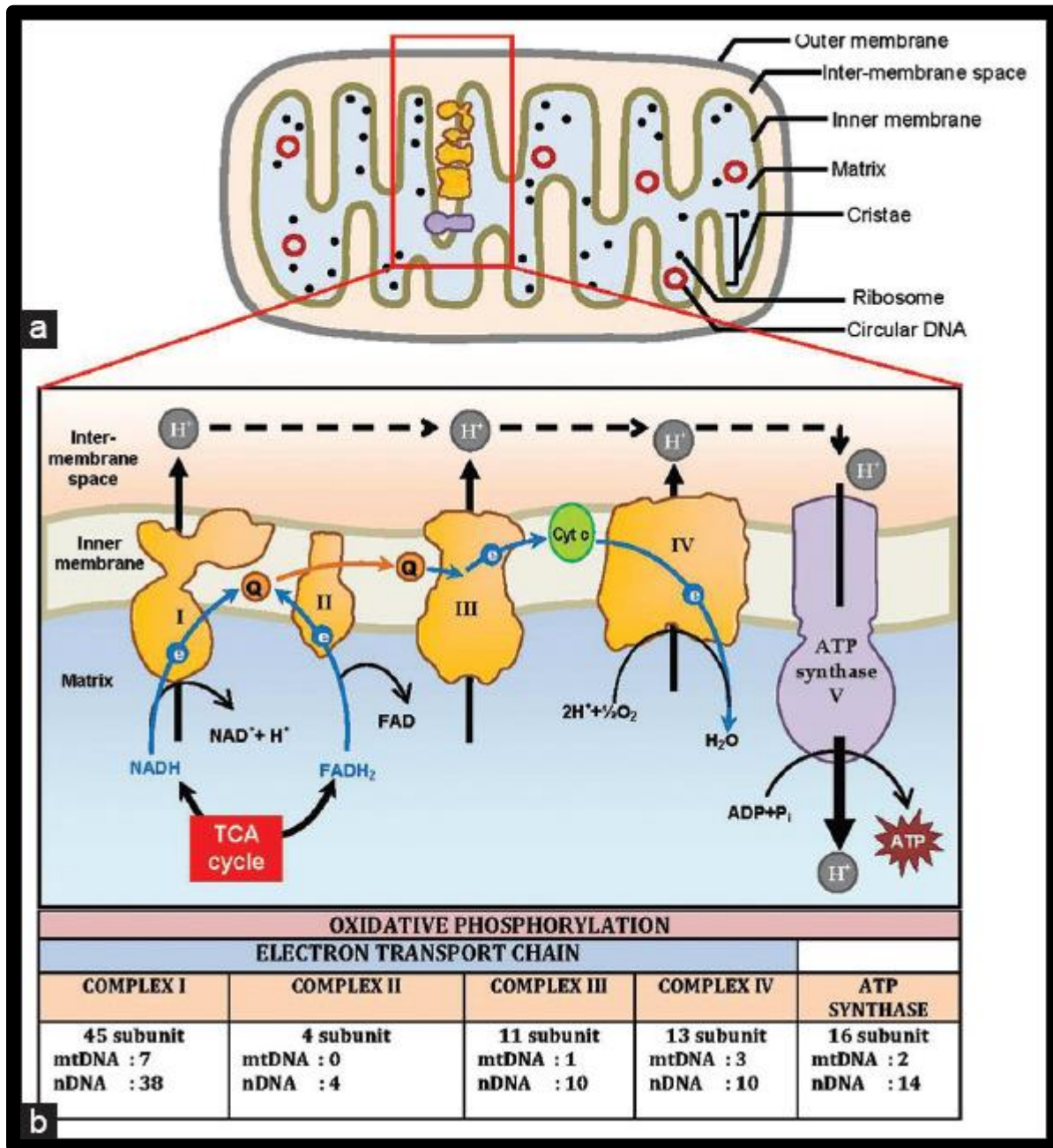


Figure 4: Structure of a mitochondrion and the human electron transport chain/oxidative phosphorylation system [2].

Hereabove in Figure 4, (a) Schematic representation of mitochondrion structure. (b) The four complexes of the electron transport chain (I-IV) and the ATP synthase are schematized, and the

electron/proton pathways along these complexes are indicated. As electrons flow along the electron transport chain, protons (H^+) are pumped from the matrix into the intermembrane space through complexes I, III, and IV. Protons then flow back into the matrix through complex V, producing ATP. The number of mitochondrial DNA and nuclear DNA-coded subunits of each complex are also indicated [2].

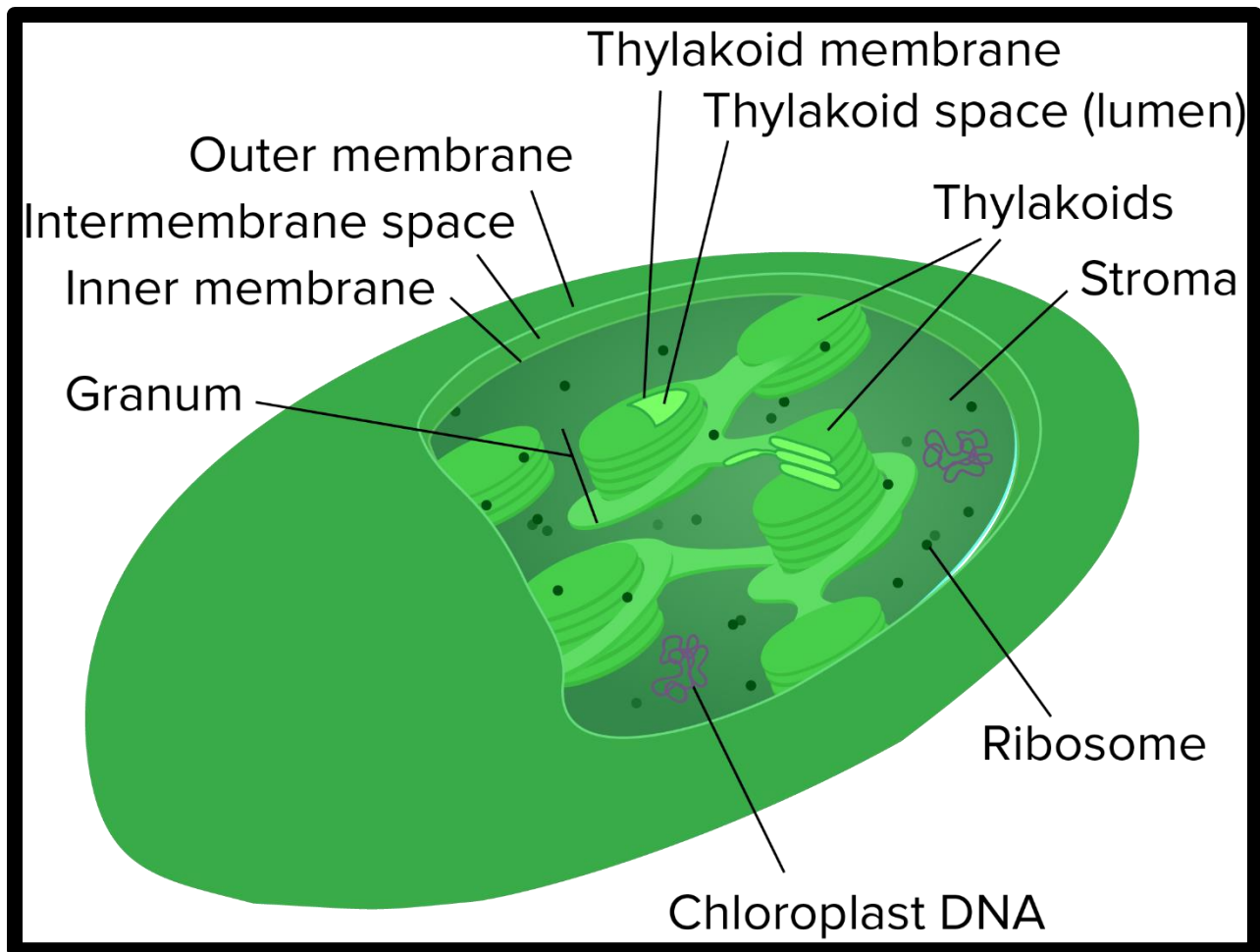
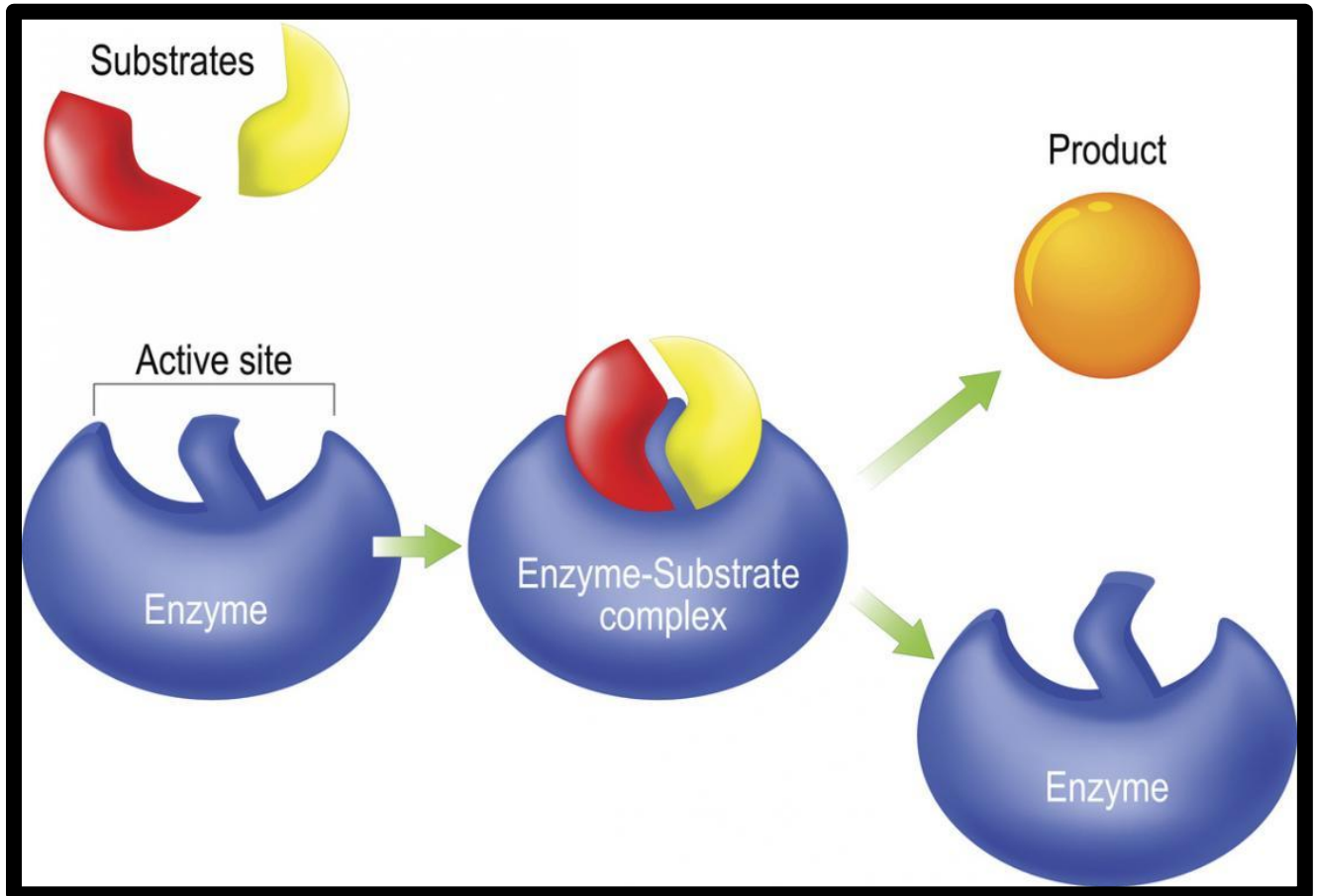


Figure 5: Anatomy of a chloroplast [1].

How enzymes work



[Share on Pinterest](#) Enzyme lock and key model

Figure 6: The model of how enzymes work.

The “lock and key” model was first proposed in 1894. In this model, an enzyme’s active site is a specific shape, and only the substrate will fit into it, like a lock and key.

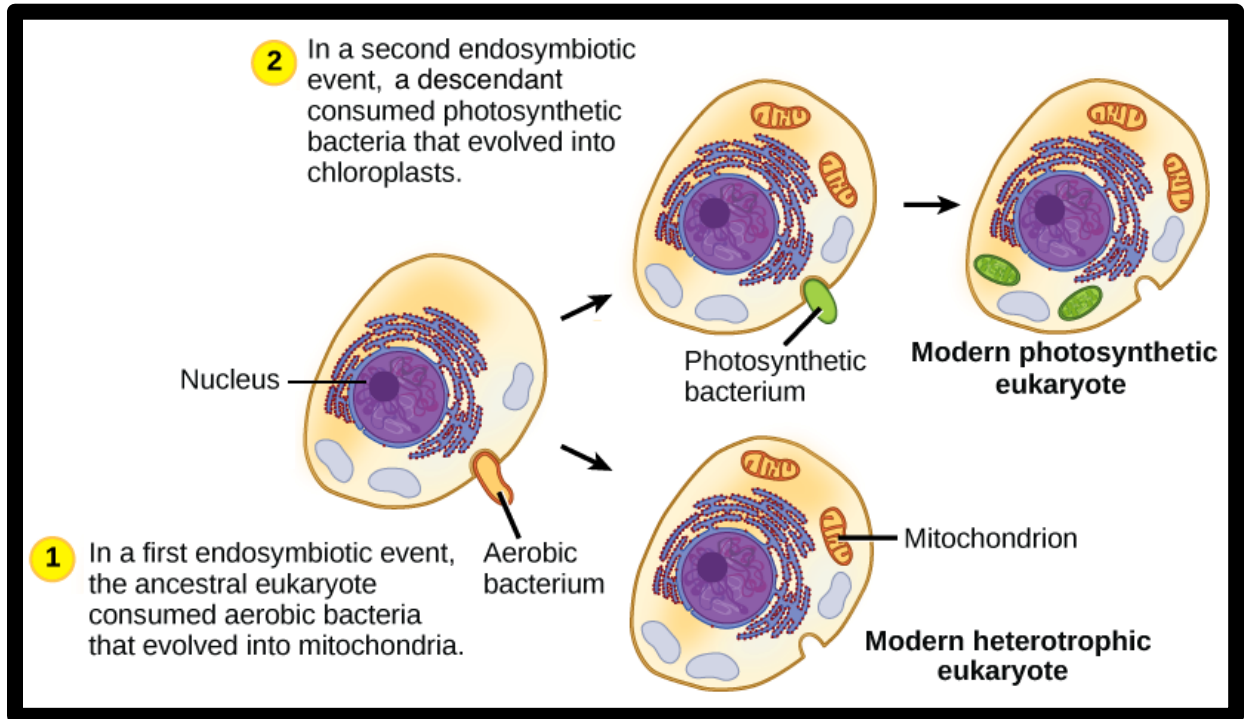


Figure 7: The illustrative events of Endosymbiotic Theory by Lynn Margulis about the origins of mitochondria and chloroplasts [1].



Figure 8: Photo of Lynn Marqulis.

Lynn Petra Alexander Sagan Margulis (1938-2011):

- ▶ Lynn Margulis (born Mar. 5, 1938 - died Nov. 22, 2011),
- ▶ Lynn Margulis was an American Distinguished Professor of Biology,

► She was the generator of the **Endosymbiotic Theory** about the origins of Mitochondria & Chloroplasts, and

► Now, her **Endosymbiotic Theory** has been **disproved** (proved **false**) by sciences of **Genomology** [3 – 5].

(A)

Connect your computer to Internet. Steps of opening the video: Select, copy and paste the title of the video (only the blue colored & underlined) on Google search space on your computer desktop screen and then press Enter Key of your computer keyboard. Click Video. Now, click the slide with the correct Title of video you pasted because when the video is copied & pasted, several other unwanted videos will appear together. When video 1 ends playing, repeat the same steps for playing of video 2 and then that of video 3, etc.

Video 1: [Mitochondria Cells MCAT Khan Academy-You Tube](#)

Video 2: [What is Endocytosis](#)

Video 3: [Endosymbiosis-You Tube by Paul Andersen](#)

Video 4: [Endosymbiotic Theory](#)

Video 5: [Amazing video Bacterial Phagocytosis by Macrophages and Neutrophils](#)

Video 6: [Amoeba eats two paramecia \(Amoeba's lunch\)](#)

Video 7: [Ch7 PHAGOCYTOSIS BLOOD PHYSIOLOGY](#)

Video 8: [Phagocytosis, Neutrophils & Macrophages](#)

Video 9: [Phagocytosis](#)

Video 10: [Role of phagocytes in innate or nonspecific immunity - YouTube](#)

Video 11: [The Process Of Phagocytosis](#)

Video 12: [Introns vs Exons](#)

Video 13: [Post-Transcriptional Modification of Pre-mRNA](#)

Video 14: [splicing mechanism and its importance \(overview\)](#)

Video 15: [Splicing](#)

Video 16: [Transcription and mRNA processing Biomolecules MCAT Khan Academy](#)

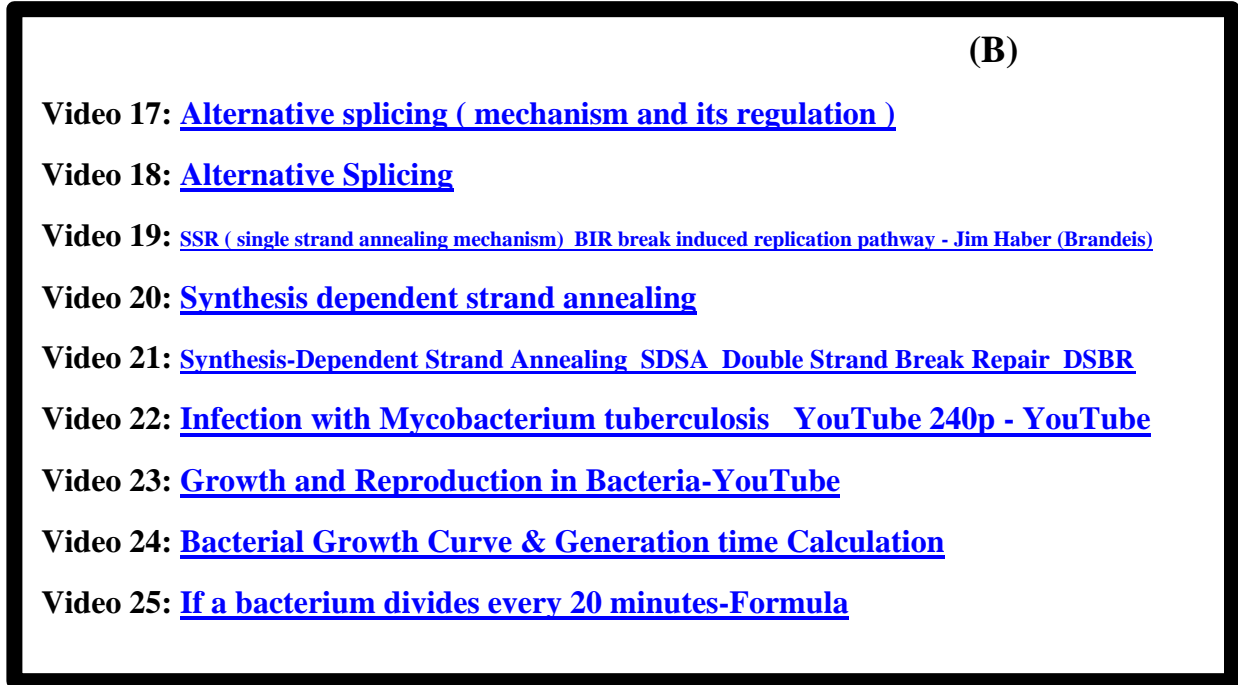


Figure 9: Videos of mitochondria, endocytosis, endosymbiotic theory, phagocytosis, splicing, and bacterial growth curve together with the generation time calculation.

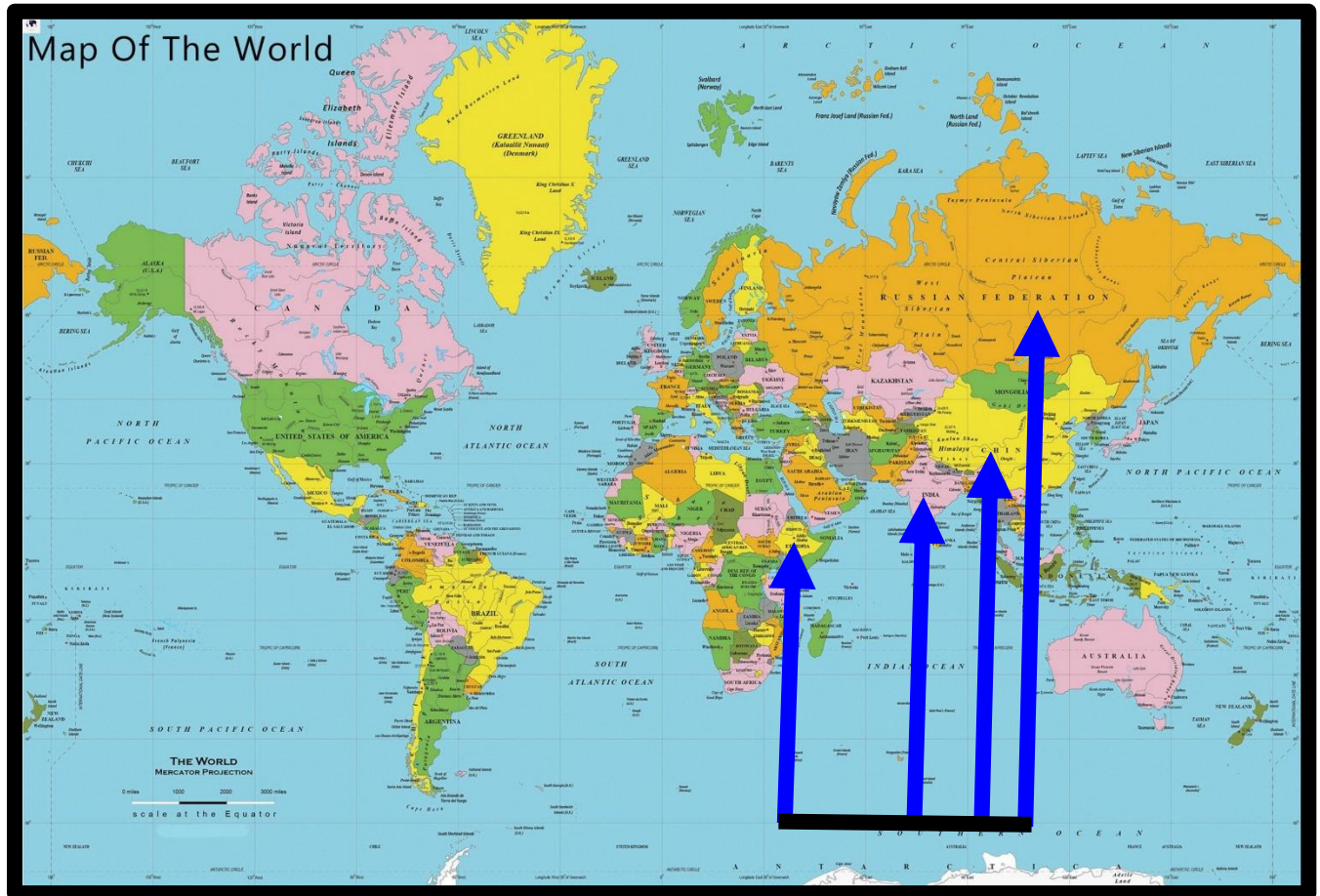


Figure 10: Map of the world with arrows showing the 4 countries (**India, China, Russia & Ethiopia**) where each of them is a superpower in the aspects mentioned in the **Conclusion Section** of this paper.

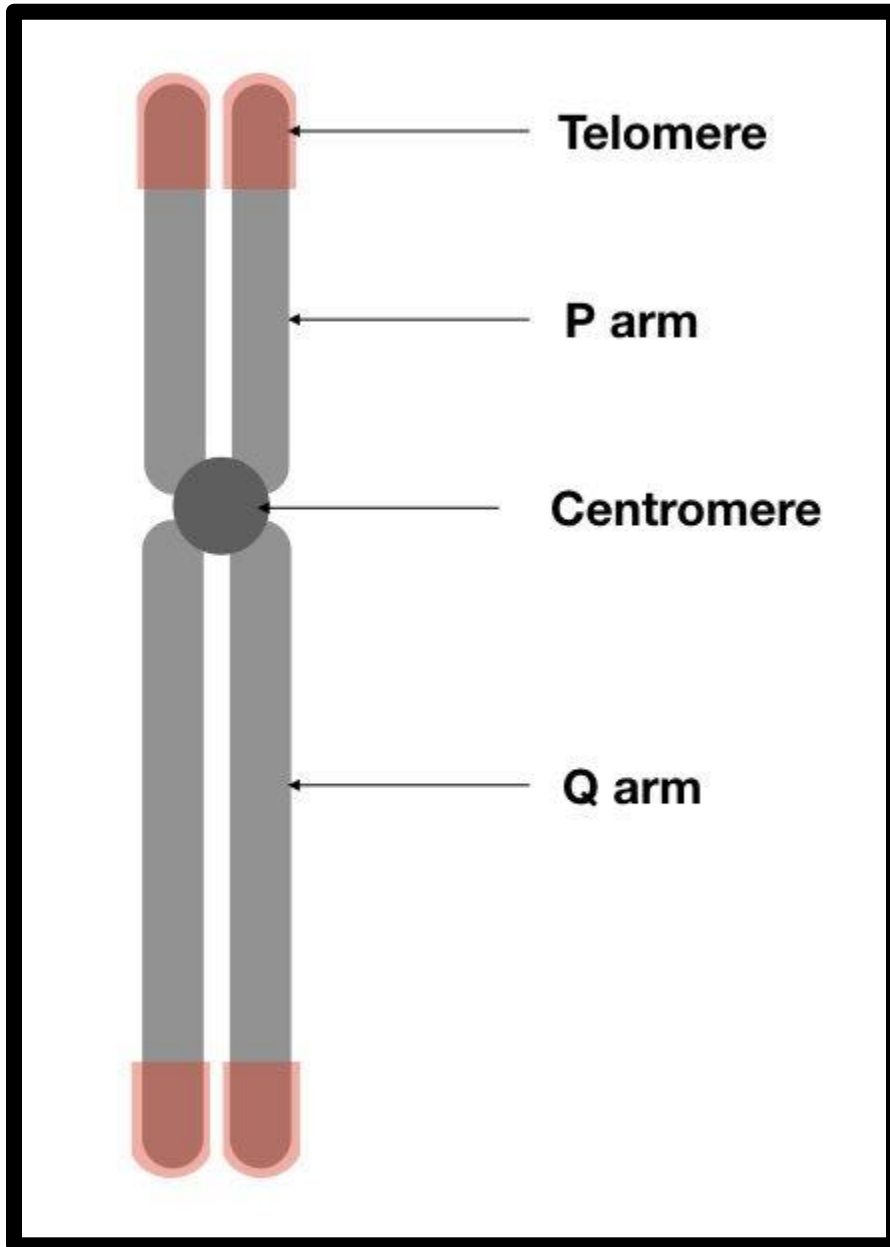


Figure 11: Morphology of a chromosome with sister chromatids & telomeres.

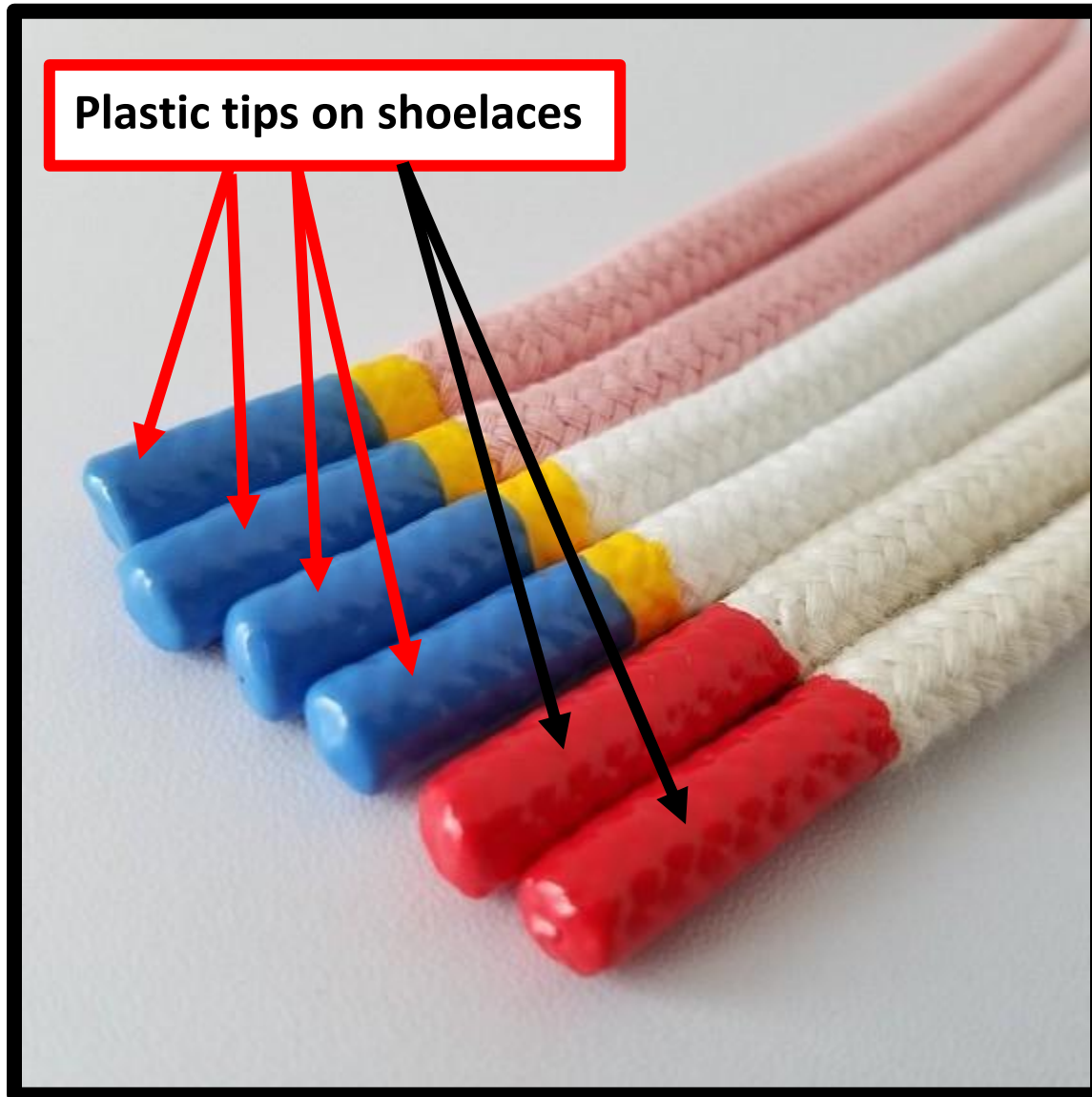


Figure 12: Plastic tips on shoelaces analogous to the actual morphology of **telomeres** at each of the two ends on each of the 46 human chromosomes.

Hereabove, **plastic tips** = analogous to **telomeres**

Concrete & spectacular evidences for the fact that Lynn Marquius's Endosymbiotic Theory about the origin of Mitochondrion in eukaryotic cells is false and laughable:

1st. A phagocytosed bacterium is either a prey to be a meal for the phagocyte or a foreign microbe attacked by an immunologically competent phagocyte cell to be killed & digested by digestive enzymes of lysosomes.

2nd. If the bacterium phagocytosed evades by some mechanism & escapes destruction by the phagocyte within its cytoplasm, the bacterium proliferates and breaks apart (lyses) the phagocyte that has engulfed it.

3rd. It is self-demonstrated that the mitochondrial DNA is **histone-free** and **intron-free** because each of the two strands of mitochondrial DNA has been mature RNA transcribed from the maternal **Genome's** DNA. Then, these two different RNAs annealed to be a functionally capacitated & double-stranded transcript of human **Genome**.to serve in the cytoplasmic organelle \called mitochondrion that mainly perfoms the task of energy (**ATP**) production to power the genomic reactions of the cell.

4th. B and T cells are synthesized by the human **Genome** by breaking & rearranging segments of DNA in them to establish the giant system of **Specific Immunity (Humoral & Cellular)** in the subject of **Immunology** let alone to transcribe a **double-stranded transcript** to function in the cytoplasmic organelle called **mitochondrion**.

5th. Mitochondrial DNA is a **haploid** annealed transcript transcribed from the nuclear genome like any other coding and non-coding **haploid** single-stranded RNAs such as messenger RNAs (mRNAs), small non-coding RNA (sncRNA) and long non-coding RNA (lncRNA).

6th. Coding transcripts are always spliced, i.e., introns are removed from the immature RNA & exons are rejoined in the mature RNA. Because of this post-transcriptional splicing in the double-stranded mitochondrial DNA, each of the two mitochondrial DNA strands is free of intron. This result of splicing is the perfect spectacular evidence about the fact that mitochondrial DNAs are certainly functional transcripts transcribed from the nuclear **Genome** of mother.

DISCUSSION

A phagocytosed bacterium is either a prey to be a meal for the phagocyte or it is a foreign microbe attacked by an immunologically competent phagocyte cell to be killed & digested by digestive enzymes of lysozymes. This means that there is no chance for the phagocytosed bacterium to survive against the danger of being digested by the digestive enzymes of lysosomes [1].

If the bacterium phagocytosed evades by some mechanism & escapes destruction by the phagocyte within its cytoplasm, the bacterium proliferates and breaks apart (lyses) the phagocyte that has engulfed it [5]. As it has been stated above or based on the events that could have happened, the prokaryotes phagocytosed could not evolve into mitochondria and chloroplasts in the cytoplasm of the eukaryotic cells [1]. Therefore, **Endosymbiotic Theory** forwarded by **Lynn Margulis** is a misleading **lie**, being ridiculously laughable. In the symbiotic relationships between two different species of organisms, the symbiont can live & survive on the surface in direct contact, in the gut, in body cavity or tract, pits or gaps of joints and other equivalent body sites of the host where the host's genomic reactions cannot be negatively affected, but the endosymbiosis of the engulfed

prokaryotic endosymbiont residing safely in the **cytoplasm** of the eukaryotic phagocyte (host cell) is impossible and never known [1, 5]. In short, the only alternative possibility is either:

► the engulfed bacterium is killed & digested by the lysosome enzymes of the phagocyte

[1], or

► if the bacterium engulfed evades by some mechanism & escapes destruction by enzymes of lysosome in the cytoplasm of the phagocyte (host cell), it will divide and proliferate in the cytoplasm of phagocyte, resulting in destruction (lysis) of the phagocyte (host cell) [5].

It is self-demonstrated that the mitochondrial DNA is histone-free and intron-free because each of the two strands of mitochondrial DNA has been mature DNA (being intron-free) transcribed from the maternal **Genome's** DNA [3]. Then, these two free single-stranded DNA molecules joined up (annealed) to be functionally capacitated by being double-stranded transcript of human **Genome** to serve in the cytoplasmic organelle called mitochondrion that mainly performs the task of energy (**ATP**) production to power the genomic reactions of the cell [2, 4]. The whole set of all mitochondrial DNAs are collectively called as mitochondrial **Transcriptome** (**mtTranscriptome**) and not mitochondrial **Genome** (not **mtGenome**). Mitochondrial DNA is not a genome but a single type of double-stranded or annealed transcript encoded and transcribed from the human nuclear **Genome** of oocyte cell. The two main structural differences between mitochondrial DNA as a transcript and other RNA transcripts are:

► mtDNA is a type of transcript being deoxyribose nucleic acid having **-H** atom instead of **-OH** at **2'-Carbon** of 5-carbon sugar whereas other RNAs have **-OH** at **2'-Carbon** of the 5-carbon sugar, and

► mtDNA is a double-stranded transcript whereas other RNAs are single-stranded transcripts. Otherwise, both mtDNA and other RNAs are transcribed from the same nuclear **Genome**.

The secrets of **Genome** & genomological sciences are wonderful!! Look, human **Genome** is able to synthesize **B** and **T** cells by breaking & rearranging segments of DNA in them to establish the giant system of **Specific Immunity** (both **Humoral** & **Cellular**) in the subject of **Immunology** let alone to synthesize a single **annealed** (or **double-stranded**) DNA as a **transcript** and exporting it into the cytoplasmic organelle called **mitochondrion**. Most of the proteins and other molecules that make up mitochondria originate from the nuclear **Genome** of the cell. Although mtDNA mutations do cause some mitochondrial diseases, the majority of disease conditions are actually the results of mutations in genes found in the nuclear **Genome** that encode a number of proteins translated and transported to mitochondria in the cell [6].

Mitochondrial DNA is a transcript of DNA type transcribed from the nuclear **Genome** [7-9] by way of **Splicing** & **Annealing** and then transported to the cytoplasmic organelle called **mitochondrion**. It is a haploid double-stranded molecule because the paternal mtDNA entering

oocyte with sperm has been reported that it is destroyed from the cleaving embryo at or soon after the 2-cell stage. It can be synthesized by way of single-strand annealing using homologous strands where deletion, insertion, rearrangements of DNA segments are involved for effective recombination in order to make it capacitated enough for the major function of energy (ATP) production in mitochondria found in cytoplasm of the cell.

Coding transcripts are always spliced, i.e., introns are removed from the immature RNA & exons are rejoined in the mature RNA. Because of this post-transcriptional splicing in each of the two strands then the annealed (joined up) strands of mitochondrial DNA are free of intron. This result of splicing is the perfect spectacular evidence about the fact that mitochondrial DNAs are certainly functional transcripts transcribed from the nuclear **Genome** of mother [10-16].

CONCLUSION



The human mitochondrial DNA is a transcript obtained when two different spliced or mature RNAs transcribed from the nuclear **Genome** of human oocyte have annealed into double-stranded transcript and exported into the cytoplasmic organelle called mitochondrion (*plural, mitochondria*) that mainly performs the task of producing energy (ATP) to power the genomic reactions of the cell. It is an encoded transcript from the nuclear **Genome** of man like any other transcripts of different functions such as ribosomal RNA (rRNA) and messenger RNA (mRNA). **Lynn Margulis's Endosymbiotic Theory** which stated that mitochondrion & chloroplast found in eukaryotic cells had evolved from bacteria (prokaryotes) when they were engulfed by eukaryotic cells, was a misleading **lie** that would had been ridiculously laughable!!!!



Genome is not only the **true automatic molecular machine** capable of synthesizing genomic-things, it is also a supersensitive molecule where **symptoms, syndromes, epigenetic modifications** and **immunological defensive reactions** are the evidential responses from its supersensitivity. Epigenetics is actually the study of supersensitivity of the **Genome** by attaching epigenetic groups or chemicals to **Genome** that are not structural parts of the **Genome**.



The father of genomic-things is very strongly confident to blame all scientists of the **Universal Reactions of Matter** so as to wake them up because:

► Chemists & Physicists have been remained passive, accepting (admitting) the law or principle of defining all nongenomic-things are **nonliving-things (matter)** as if it is true, contradicting the **Law of Conservation of Matter**, for hundreds of years. Based on this principle/law, elements on periodic table, every radio-active element, substances such as H₂O & CO₂, stars, clouds and rocks are nonliving-matter (things)!!!!,

► Genomologists have been ashamed for they have been forcing generations of innocent student children of all human races to learn (to be taught) fake sciences of Biology for centuries, and

► There have been so many **Professors of Genetics** in this world and they cannot say that they do not know genetics and again they cannot say that they even do not know the difference between chromosomes and **Genome**; above all, it is immoral for **Geneticists** to say that they have not been able to define what a genomic-thing is before the emergence of Genomology!!!!



Reupdated confirmation with the best of truth:

► Superpower in **Medical & Agricultural Sciences** in the entire world is **India** at present,

► Superpower in **Economy** in the entire world by dethroning USA with an excess of giant difference is **China** at present,

► Superpower in **Nuclear Military Science** in the entire world is **Russia** at present, and

► Superpower in **Power of Mind in Genomological Sciences** in the entire world with no rival & claimer is **Ethiopia** forever, **being nondethronable** endlessly for countably infinite number of the future generations to come (i.e., of all human races)!!!!

Ethics: I declare that no ethical error is committed in the production of this paper. I also declare that I don't have any conflict of interest with anybody.

Acknowledgements

I am deeply grateful to scientists acknowledged in the text and list of references of this paper for their providing me with confidential data that can be counterchecked, for their correctness, with observable facts in the natural environment as well as with truths in reputable journals, and Internet. This is so because science cannot develop without science. I am really thankful to authors of musical art & musicians for their carefully following and transforming my published articles of genomological sciences into musical films. I am very strongly thankful to those global scientific communities for their genuinely following my task of performing to establish the sciences of Genomology and for their authentic thanking me by way of emails for what I have contributed to the scientific world of Genomology. My thanks definitely go to genomologists who are involved in presenting video lessons of Figure 8.

(A)

Connect your computer to Internet. Steps of opening the video: Select, copy and paste the title of the video (only the blue colored & underlined) on Google search space on your computer desktop screen and then press Enter Key of your computer keyboard. Click Video. Now, click the slide with the correct Title of video you pasted because when the video is copied & pasted, several other unwanted videos will appear together. When video 1 ends playing, repeat the same steps for playing of video 2 etc.

- Video 1: [Abraham Gebremedhin Ethiopia Hagere Lyrics አብርሀም ገብረመድህን ኢትዮጵያ ሀገራ በግጥም](#)
- Video 2: [Berhe Amare - Kihdet \(Official Video\) Ethiopian Tigrigna Music](#)
- Video 3: [Ethiopian Music Atalay Yibel አታላይ ይበል \(የዓለም ፀሐያ\) - New Ethiopian Music 2022](#)
- Video 4: [ማን እንደ ኢትዮጵያ አዲስ መንፈሳዊ ዝማራ በዲያቆን ዘዉዱ ተገኝ](#)
- Video 5: [Kalkidan Asmare - Adera ቃልኪዳን አስማረ - አደራ New Ethiopian Music 2022 Official Music 30 June 2022](#)
- Video 6: [Belay Kefale - Yager Sew በላይ ከፋለ - የገር ሰው New Ethiopian Music 2022 \(Official Video\) ፋኖ አማራ](#)
- Video 7: [Nuradis Seid-hagere\(ሃገራ\) New Ethiopian Music 2022](#)
- Video 8: [Awtar Tv - Maseresh Alebel ኢትዮጵያ - New Ethiopian Music 2022](#)
- Video 9: [መብራ መንግሥቱ Mebrie Mengestie \[መውዜር አማረኝ\] Yordanos Alemie Ethiopian Music](#)
- Video 10: [Tewodros Samuel - Yearbegnaw Lij የአርበኛው ልጅ - New Ethiopian Music 2022](#)
- Video 11: [Bereket Mengisteab Bkewta Levty ብኸውታ ለይቲ New Eritrean Guavla Music Remix 2022](#)
- Video 12: [Bereket Mengisteab Shewit ሸዊት New Eritrean Guayla Music Remix 2022](#)
- Video 13: [Bereket Mengisteab Lebey ልበይ New Eritrean Guayla Music Remix 2022](#)
- Video 14: [Kemti Limud LIVE by Isaak Okbay - ከምቲ ልሙድ ብ ኢሳቅ ዑቕባይ - LIVE Eritrean Music 2022](#)
- Video 15: [Desse Cheko - Hageren Yebelay ደሴ ችኮላ - ሀገራን የበላይ New Ethiopian Official Music 2022](#)
- Video 16: [Yigzaw Belay - Beka Engedih በቃ እንግዲህ - New Ethiopian Music 2022](#)
- Video 17: [Meseret Getu - Wa Kla Ra ዋ ክላ ራ - New Ethiopian Music 2022](#)
- Video 18: [Addisu Mulualem - Gondar ጎንደር - New Ethiopian Music 2022](#)
- Video 19: [Habtamu Bereket Maekel Asher Tamirat \(ኮራሁ በአባቱ\) - New Ethiopian Music 2020](#)
- Video 20: [Abdurahman Abuta - Amhara Nen አማራ ነን - New Ethiopian Music 2022](#)
- Video 21: [Libsnew Berhanu - Zinare ዝናረ - New Ethiopian Music 2022](#)
- Video 22: [Azeb Dagnaw New Ethiopian Music 2021 {Official Video}ምርጥ ሙዚቃ በአዲስ ዳኛው](#)

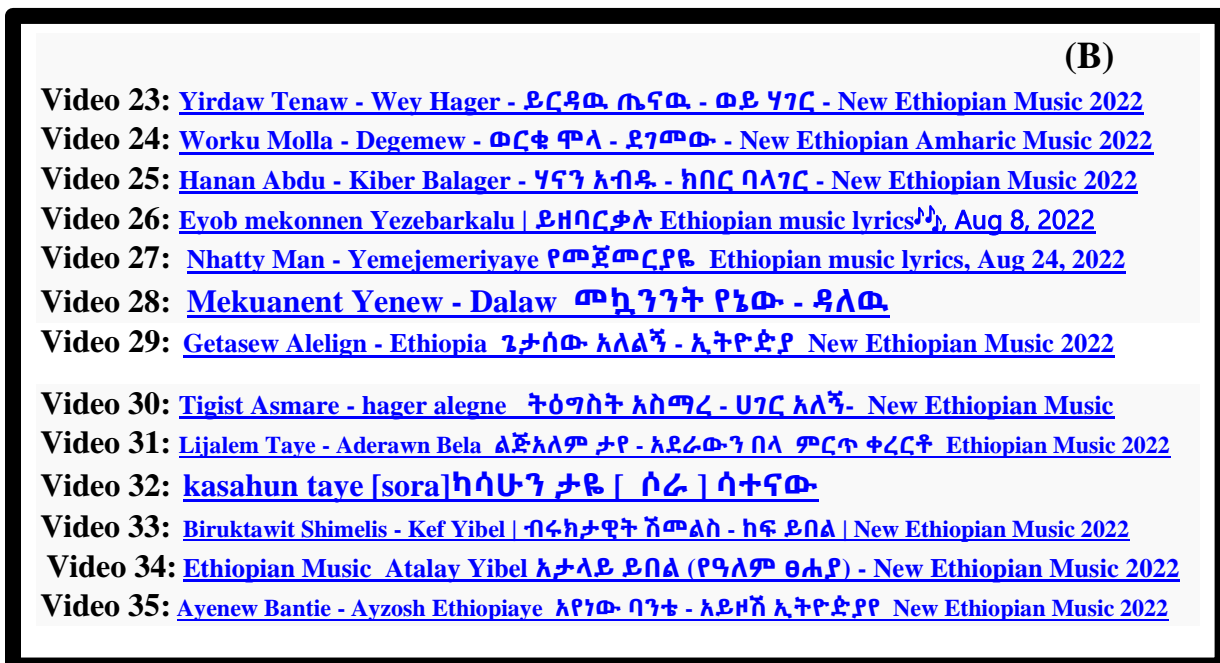


Figure 13: (A), and (B) Musical films displayed in honor of the uniquely automatic molecule termed **Genome**.

References

- [1]. Figure 9, video 1 of this paper.
- [2]. Figure 9, videos 2 to 11 of this paper.
- [3]. Figure 9, videos 12 to 18 of this paper.
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