European Journal of Biology and Medical Science Research
Vol.10, No.3, pp.26-58, 2022
Print ISSN: ISSN 2053-406X,
Online ISSN: ISSN 2053-4078

Effects of Epigenetic Groups & Chromosomal Proteins on Human Genome Expression by way of its genes and Universal Reactions of Matter

Feleke Eriso*, PhD

Associate Professor, Department of Biology, Biomedical Stream, Wachemo University, Hossana Ethiopia

Citation: Feleke Eriso (2022) Effects of Epigenetic Groups & Chromosomal Proteins on Human Genome Expression by way of its genes and Universal Reactions of Matter, *European Journal of Biology and Medical Science Research*, Vol.10, No.3, pp.26-58,

ABSTRACT: *When chemical compounds are added onto single genes, they attach or bind to a gene/s or chromosomal proteins. The attachment or binding of these chemicals cause modifications or changes in the activities of the genes (with no change in DNA sequence). These functional changes of the genes are referred to as* ***Epigenetic Modifications*** *whereas the study of the epigenetic modification and its causative agents is known as* ***Epigenetics****. The epigenetic group (chemical) attached to a gene regulates the function of the gene without any change in the DNA sequence. The key objective of this study is to impart the fact that human* ***Genome*** *is a* ***supersensitive*** *molecular machine based on its responses to epigenetic groups & chromosomal proteins. Cancer is a group of diseases arising in part from:*
*►**1.** Chromosomal abnormalities and mutations in tumor-suppressor genes & oncogenes, and*
*►**2.** Epigenetic modifications.*
The main aim of ***universal reactions of matter*** *is to improve or to make better the living standards and to create the safest conditions possible for humans in each country of the planet (Earth). Based on the main aim of universal reactions of matter,* ***China*** *has become the model country on Earth with surprising & drastic growth in economy, science and technology; and also, being one of the safest countries in the world for its residents & tourists.*

KEY WORDS: genome, epigenetic groups, modifications, cancer, acetylation, methylation, acetylases, deacetylases

INTRODUCTION

Genetic mutations can be lethal, beneficial, or may have no effect. Mutations can lead to cancer. In some cancer types inheritance due to a mutated gene is seen while other types can be caused by the common risk factors like smoking in the family. Genetic testing can be carried out to find such mutated region of the gene that can cause the onset of cancer. Inherited genetic mutations can increase the risk of developing cancer. Mostly the mutations in tumor suppressor genes and/or DNA repair genes are very likely associated with the cancer. The mutations involved in hereditary cancer syndrome can be inherited as autosomal dominant or autosomal recessive patterns. For autosomal dominant inheritance pattern, mutation in one copy of gene is sufficient to increase the

chance of developing cancer while for autosomal recessive pattern, copy of the gene from each parent (from both mother & father) need to be mutated for development of cancer.

Cancer can be caused due to various alterations. DNA methylation is observed to be a major causative factor in cancer development. Gene expression can be regulated at many of the steps in the pathway from **DNA** to **RNA** to **Protein**. The term *epigene* (Gr. *epi-* = upon; *-gene* = gene) literally means a nonself or a nongenomic chemical attached on (upon) the surface of a gene found as a segment of DNA in a **Genome**. Chemical compounds that are added to single genes can regulate the activity of these exposed genes. These functional modifications (modifications in expression), of these genes exposed to attachment or binding of the chemical compounds, are known as **epigenetic changes**.

All of the chemical compounds that are added to the entirety of one's DNAs (genome) as a way to regulate the activity (expression) of all the genes within the genome are collectively called **Epigenome**. The chemical compounds that comprise the epigenome are not part of the DNA sequence, but are attached onto DNA (*epi-* "means above, upon, or on in Greek"). Epigenetic modifications (changes) remain as cells divide and in some cases be inherited through the generations. Environmental influences such as a person's diet and exposure to pollutants, can also cause the epigenetic change. Like the epigenetic chemical groups, chromosomal proteins do attach to genes of the DNA molecule that is wrapped around them. These chromosomal proteins definitely have modifying effect on the expression of the genes in the human Genome, which can be referred to as signaling or regulatory function [1-4].

Universal reactions of matter (genomic, chemical, and nuclear reactions) are interdependent and essential for effective utilization of our environment for the better standard of human life on earth.

The key objective of this study is to impart the fact that human **Genome** is a **supersensitive** automatic molecule**.**

METHODOLOGY AND RESULTS

Based on the key objective and the accurate targets of this study, **materials**, **methods** and **results** are put together, being forwarded collectively in the form of the following 27 different labelled Figures. Therefore, observing and watching each of the videos in the Figures of videos displayed are of critical importance in order to internalize the targeted scientific truth of this study.

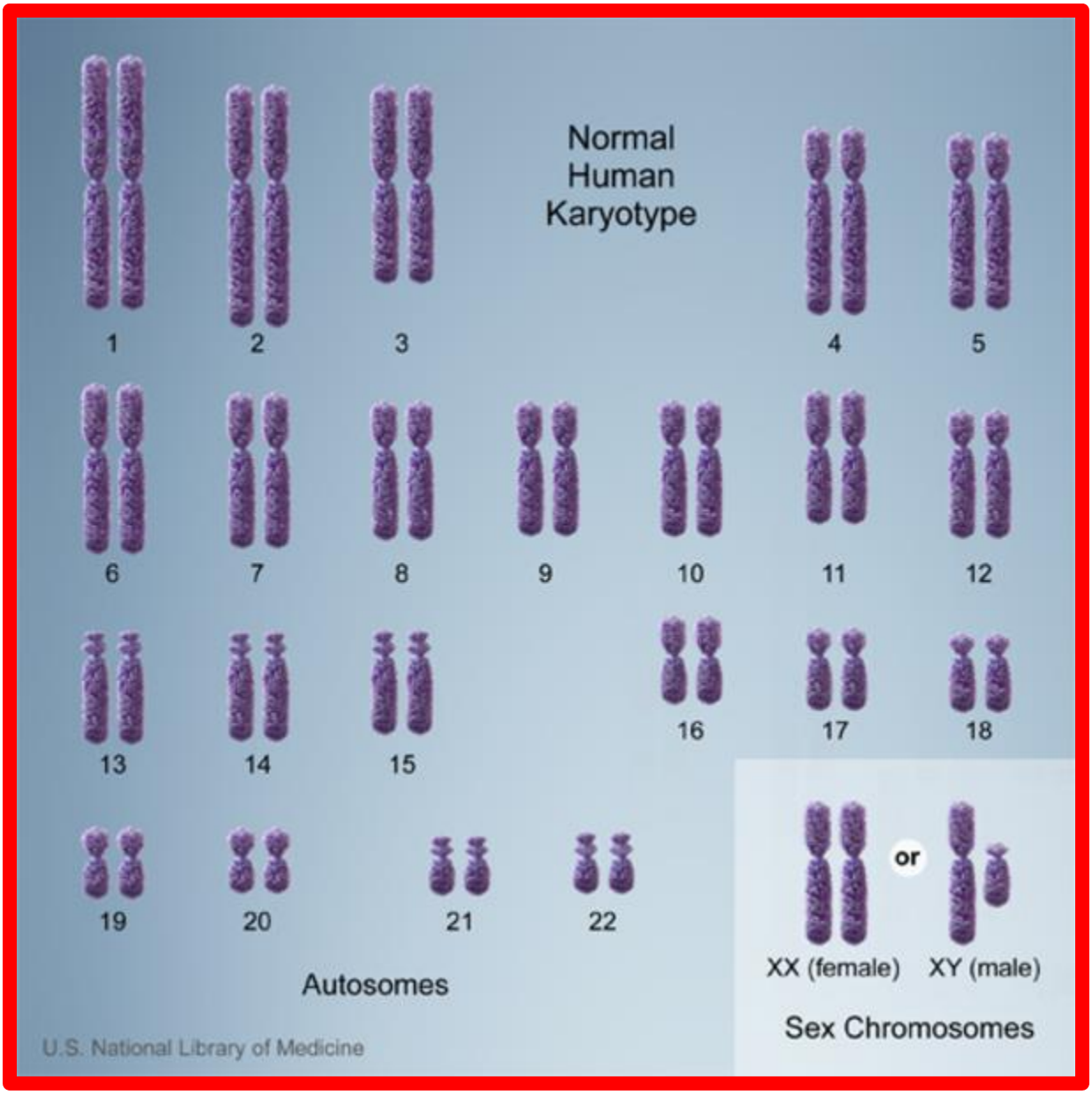


Figure 1: Human chromosomes (23 pairs), classified into **Autosomes** and **Sex Chromosomes**.

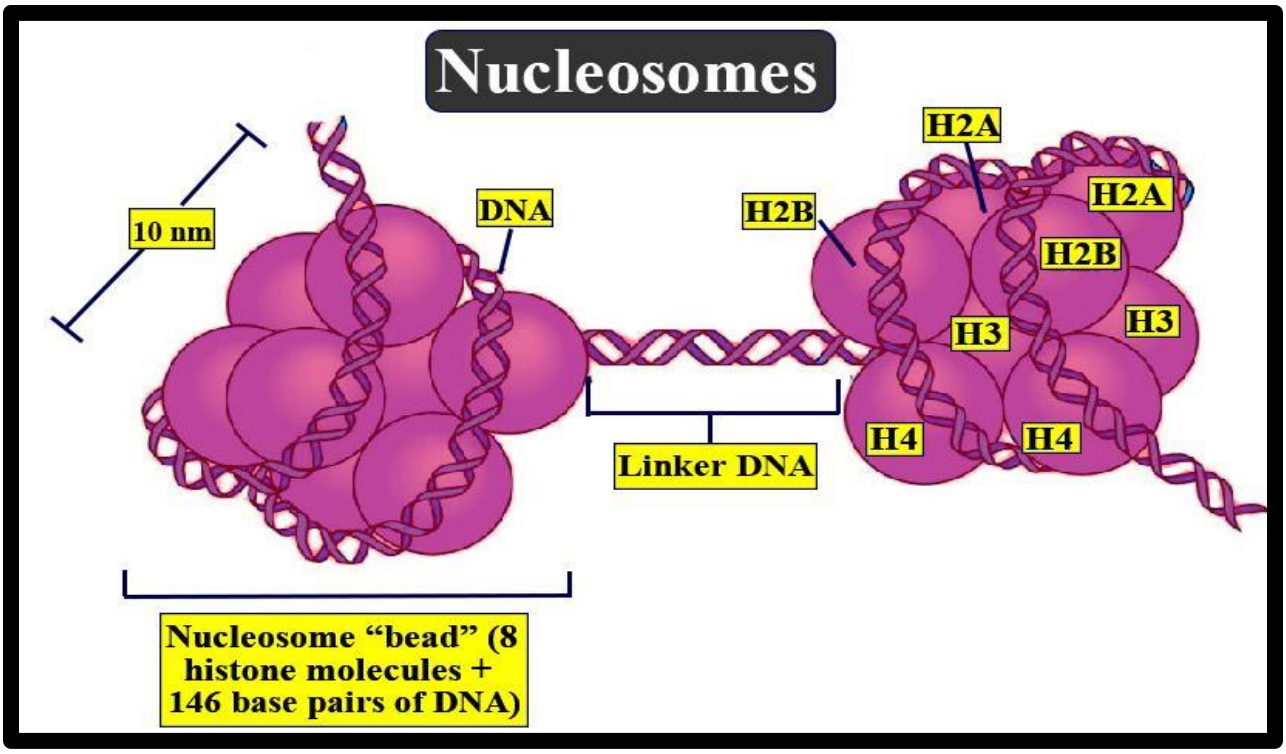


Figure 2: Two nucleosomes from a chromatin [5-14].

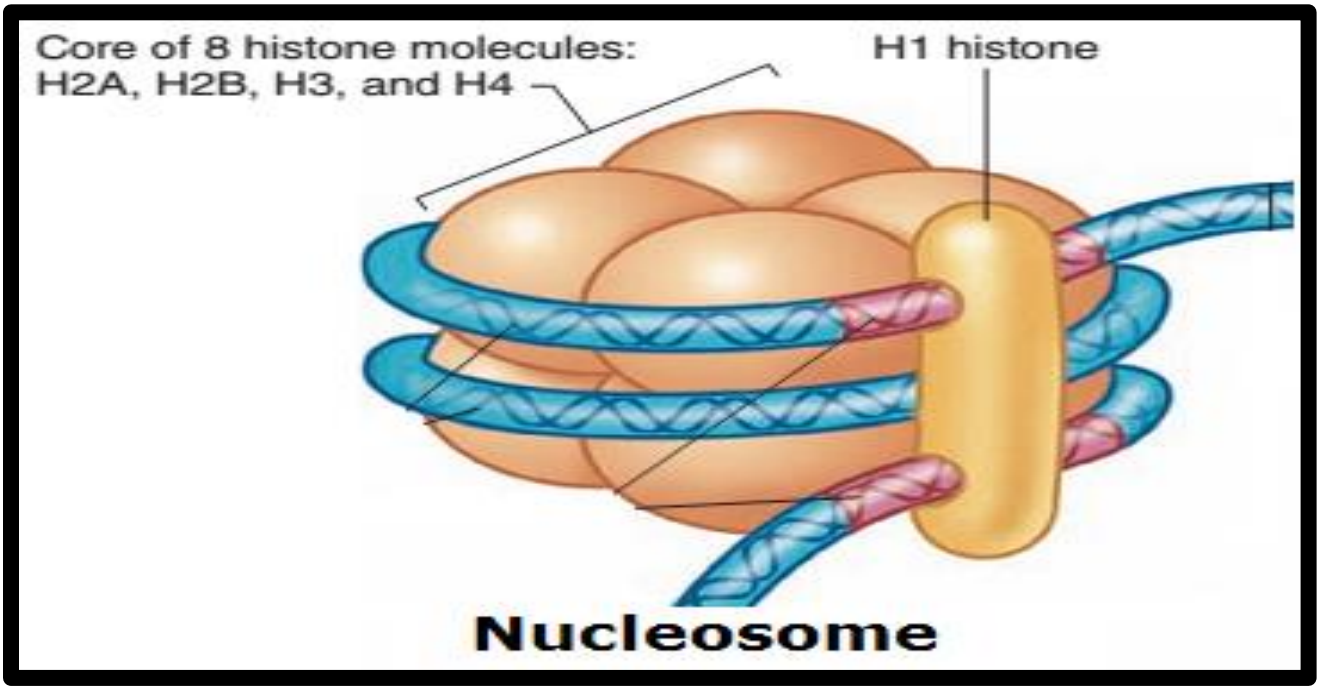


Figure 3: A nucleosome of 8 histone molecules.

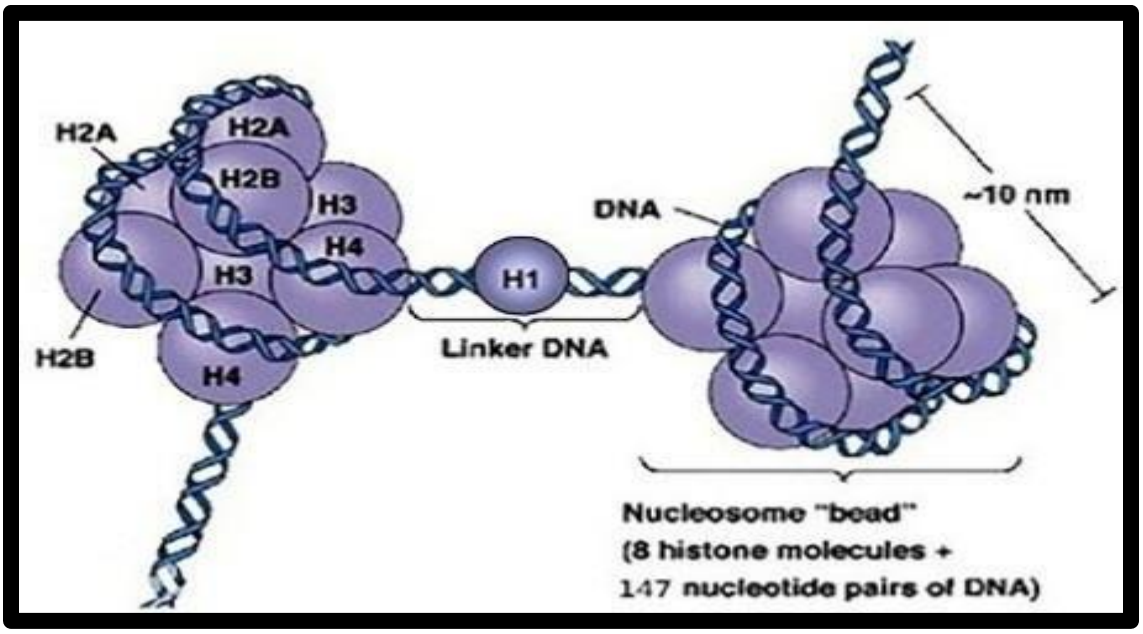


Figure 4: Two nucleosomes with different views.

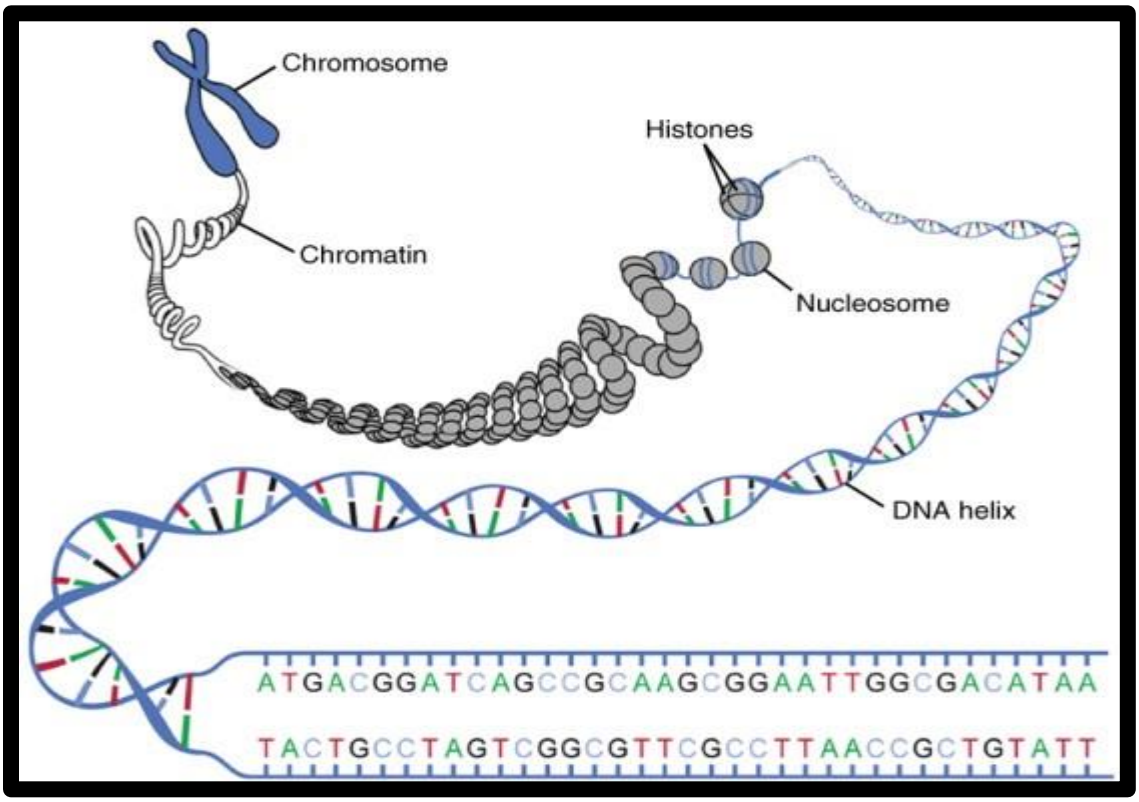


Figure 5: Views of Chromosome, Chromatin, Nucleosome, Histones, DNA helix and zipping complementary strands of DNA with nitrogenous bases.

Here above in Fig. 5, there are **two** hydrogen bonds between **A** and **T**, while there are **three** between **C** and **G**. In this Fig., the DNA has **two** srands.

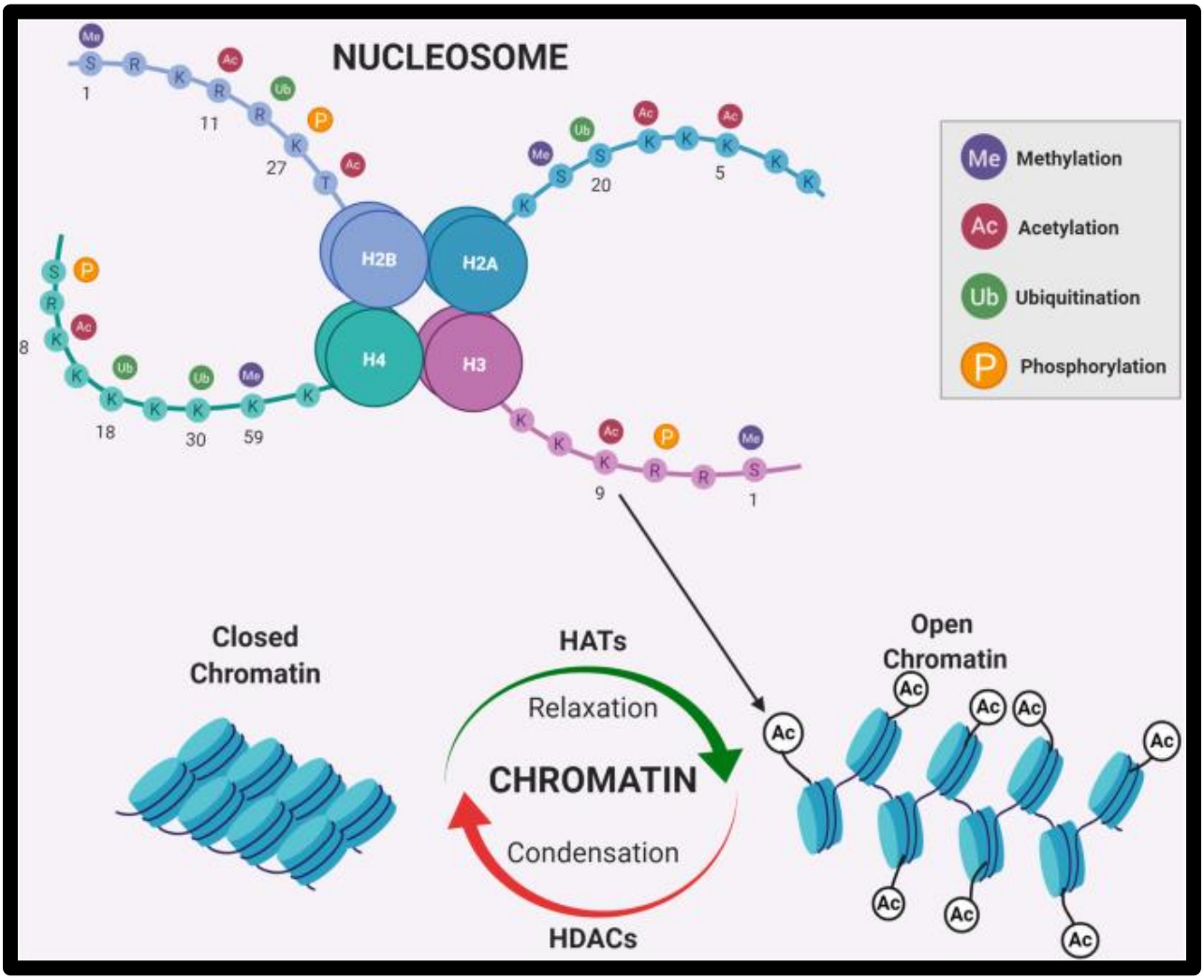


Figure 6: Fundamental structure of chromatin.

Chromatin remodelling. Fundamental structure of chromatin called nucleosome consists of two sets of four histone proteins H2A, H2B, H3 and H4. Protruding histone tails undergo post translational modifications such as methylation, acetylation, ubiquitination and phosphorylation. The numbers indicate the positions of targeted lysine groups. Histone acetylation alters the conformation of chromatin structure in nucleus by relaxing the chromatin and allowing transcriptional activation. It is regulated by two sets of enzymes HATs and HDACs which add or

remove acetyl group respectively from both histone and non-histone proteins, hence regulating gene transcription. (Created with BioRender.com)

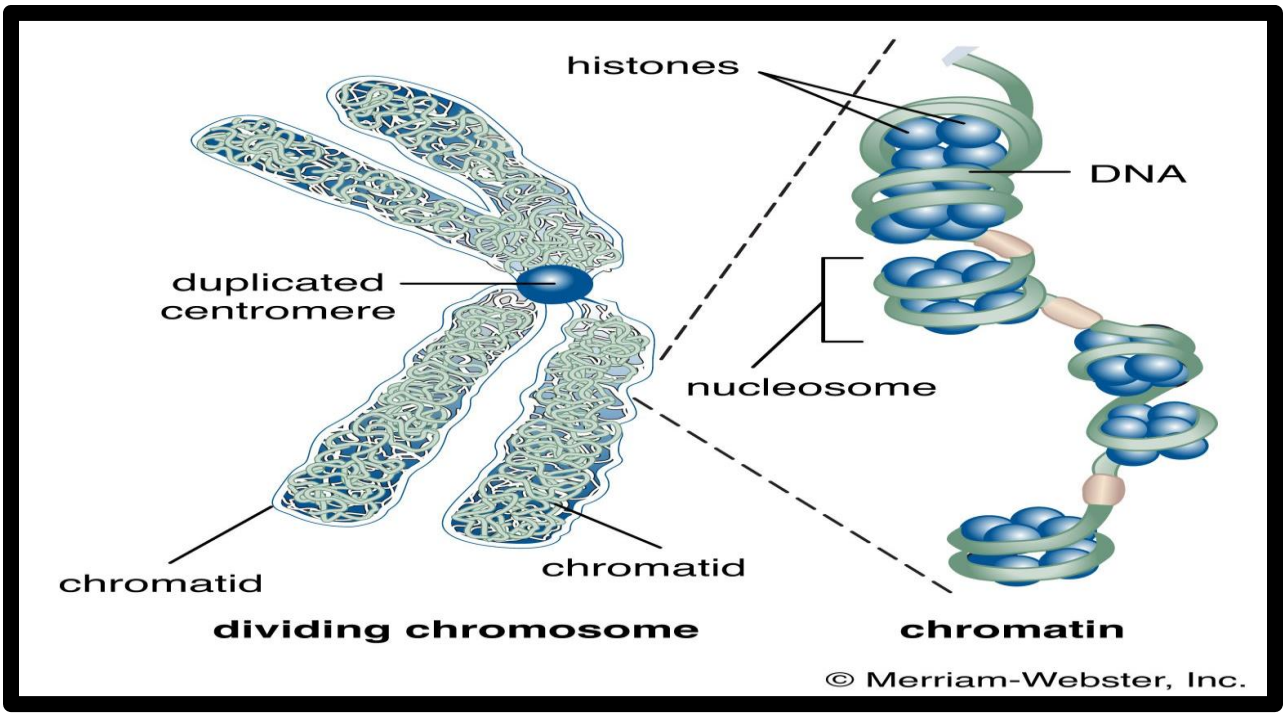


Figure 7: Morphology of a dividing chromosome and the chromatin in a nondividing state.

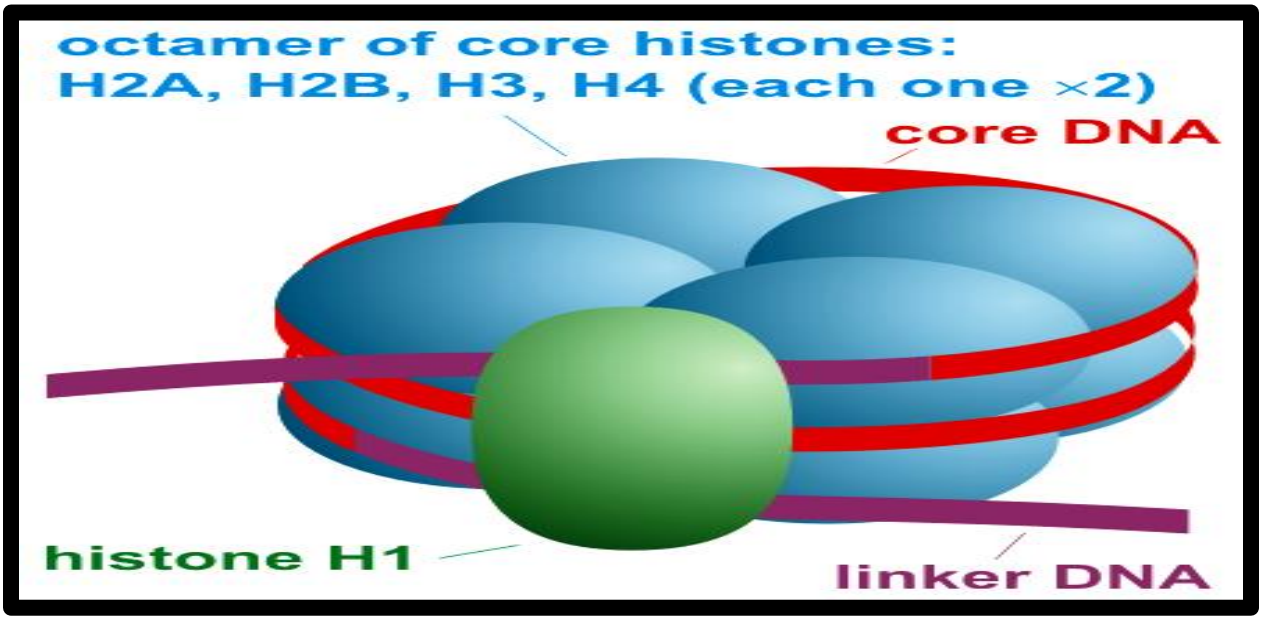


Figure 8: Morphology of octamer with core histones [5-14].

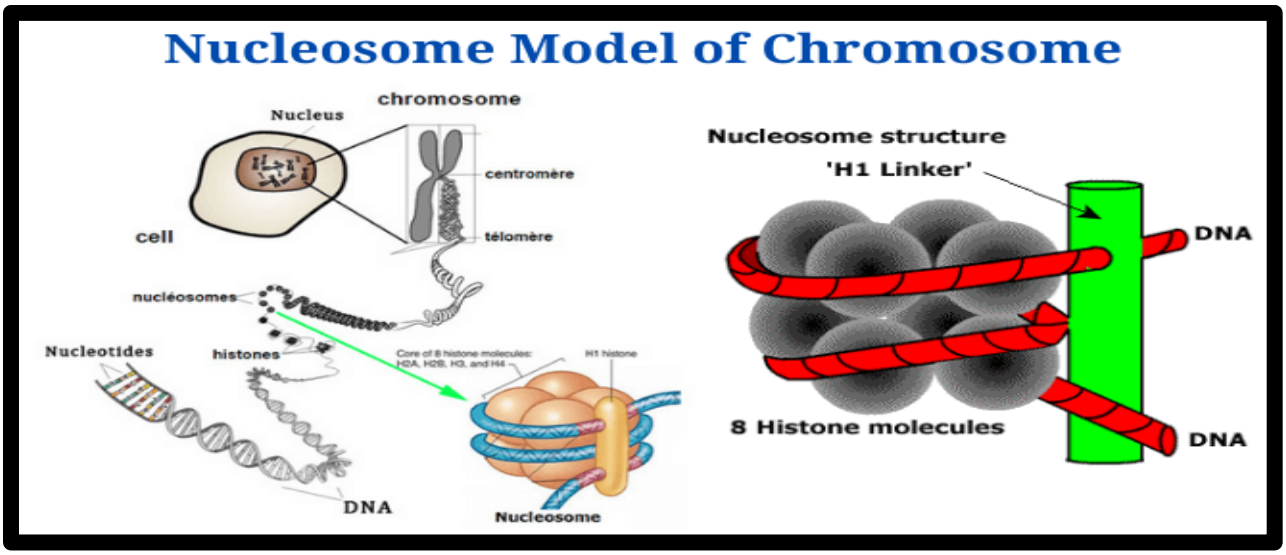


Figure 9:Nucleosome Model of Chromosome and nucleosome structure with a Linker Histone (H1 Linker).

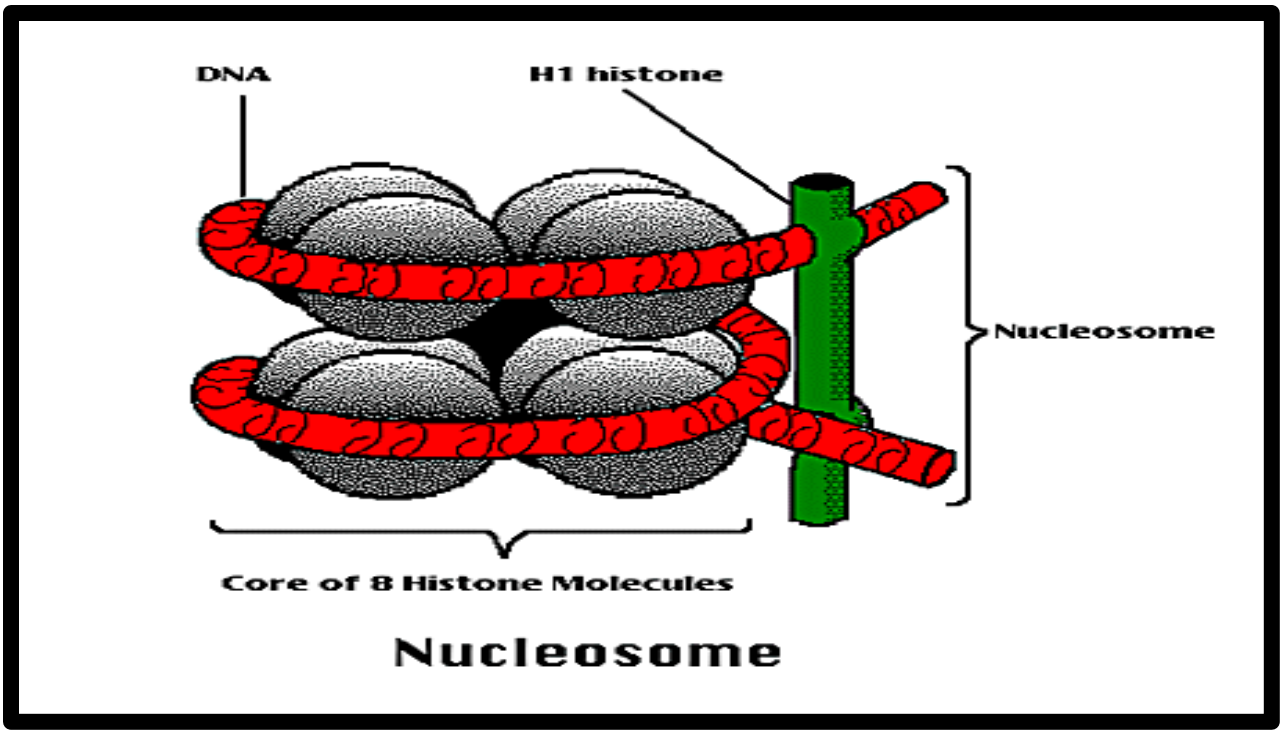


Figure 10: Morphology of a nucleosome with a better visual detail.

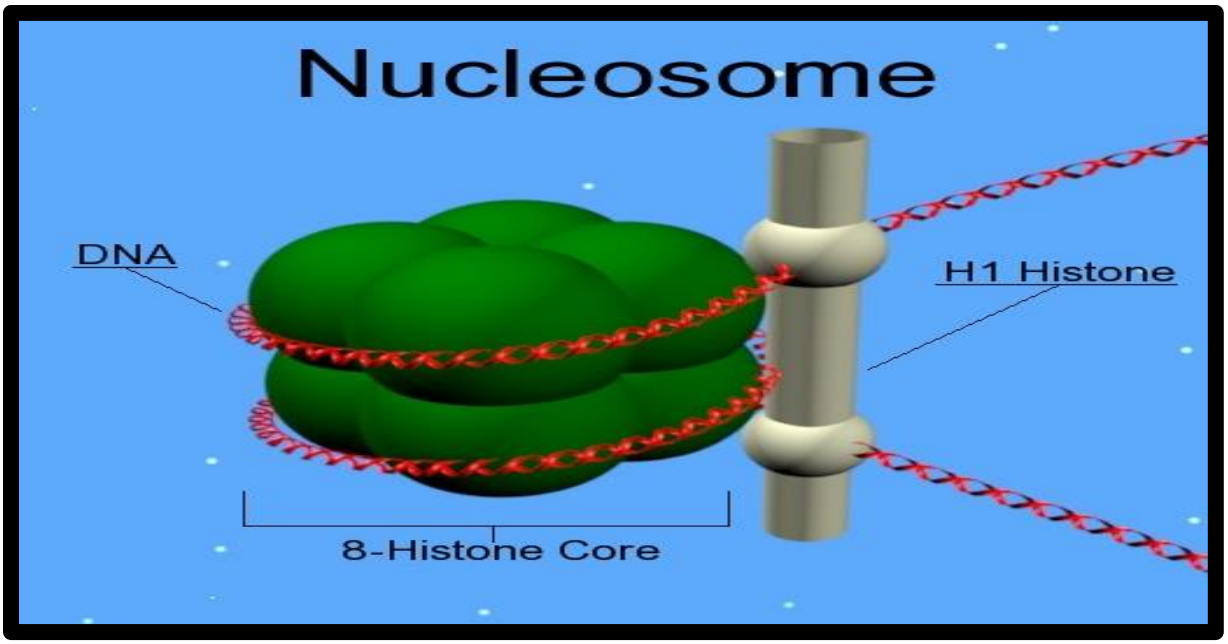


Figure 11: Nucleosome structure [5-14].

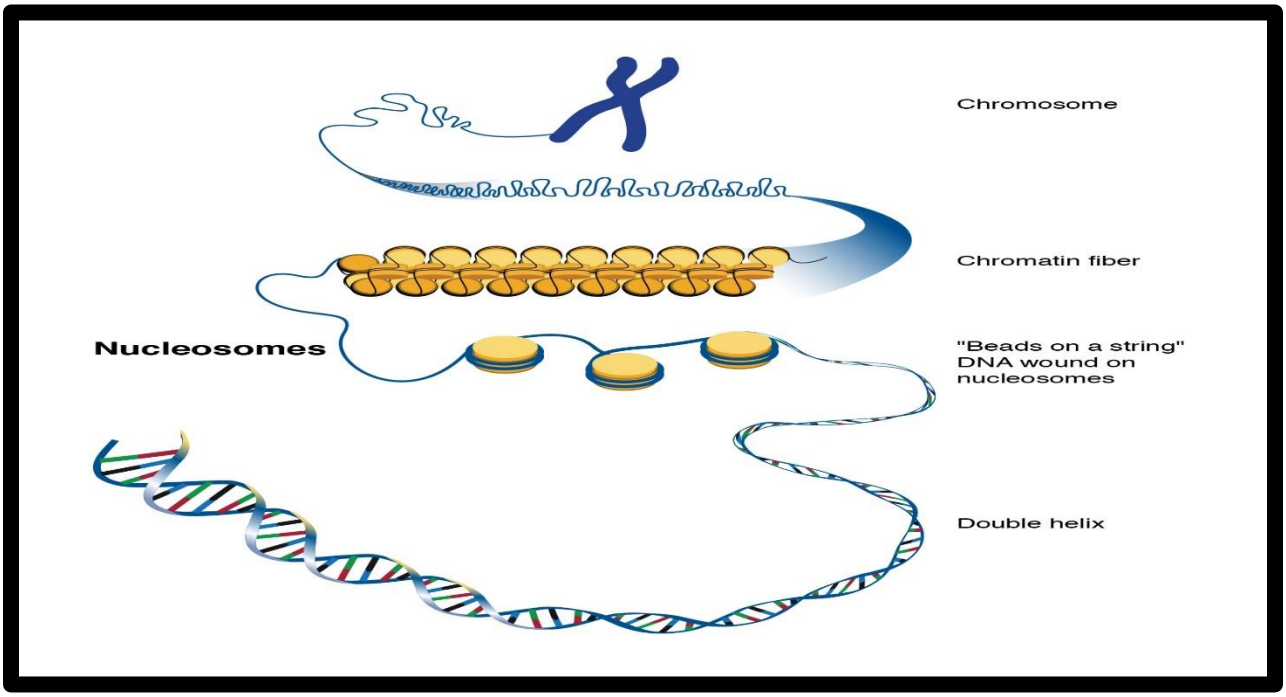


Figure 12: Levels or orders of organization of a DNA molecule.

Double helix ➡ "Beads on a string" DNA wound on nucleosomes ➡ Chromatin fiber ➡ Chromosome.

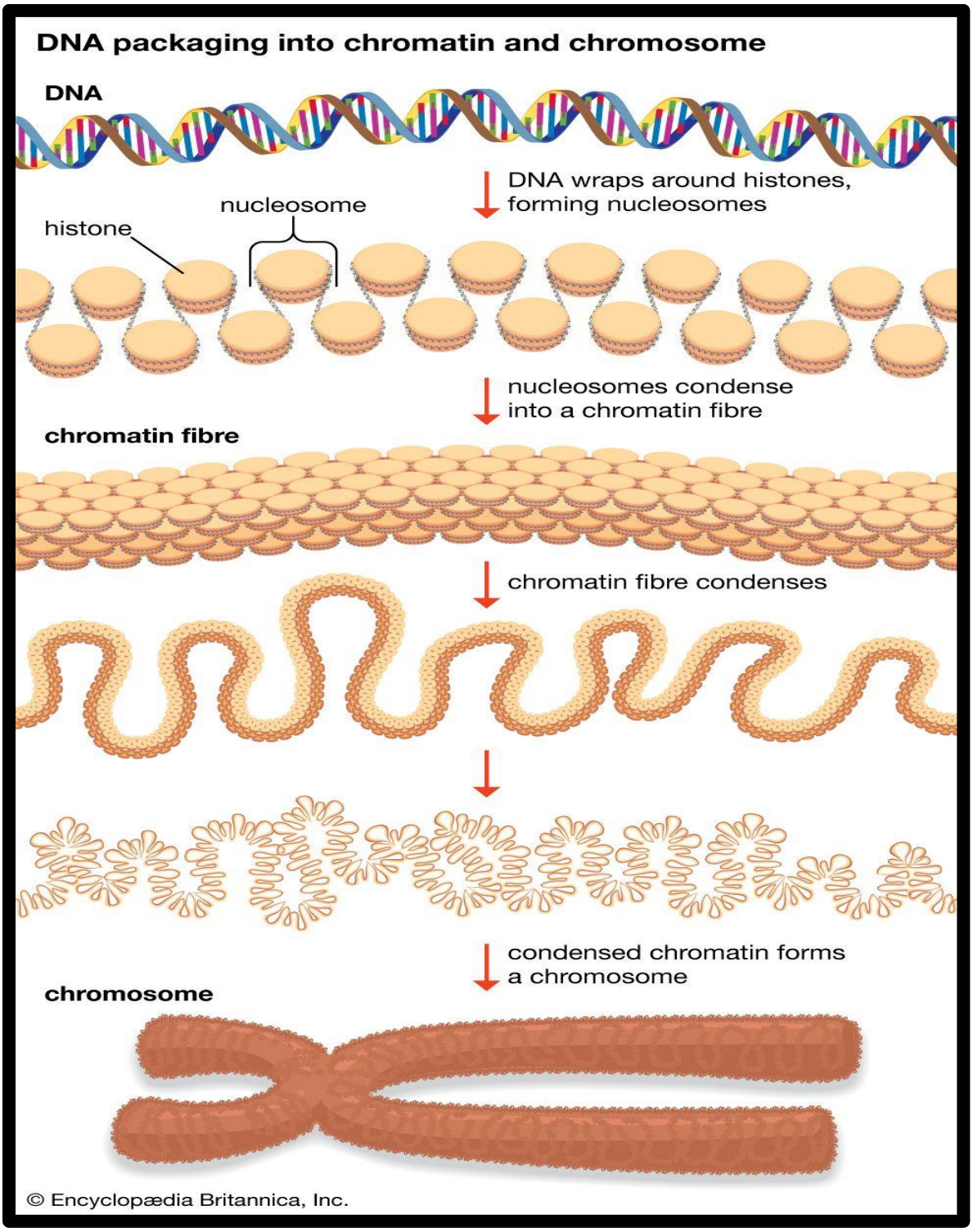


Figure 13: DNA packaging into chromatin and chromosome [5-14].

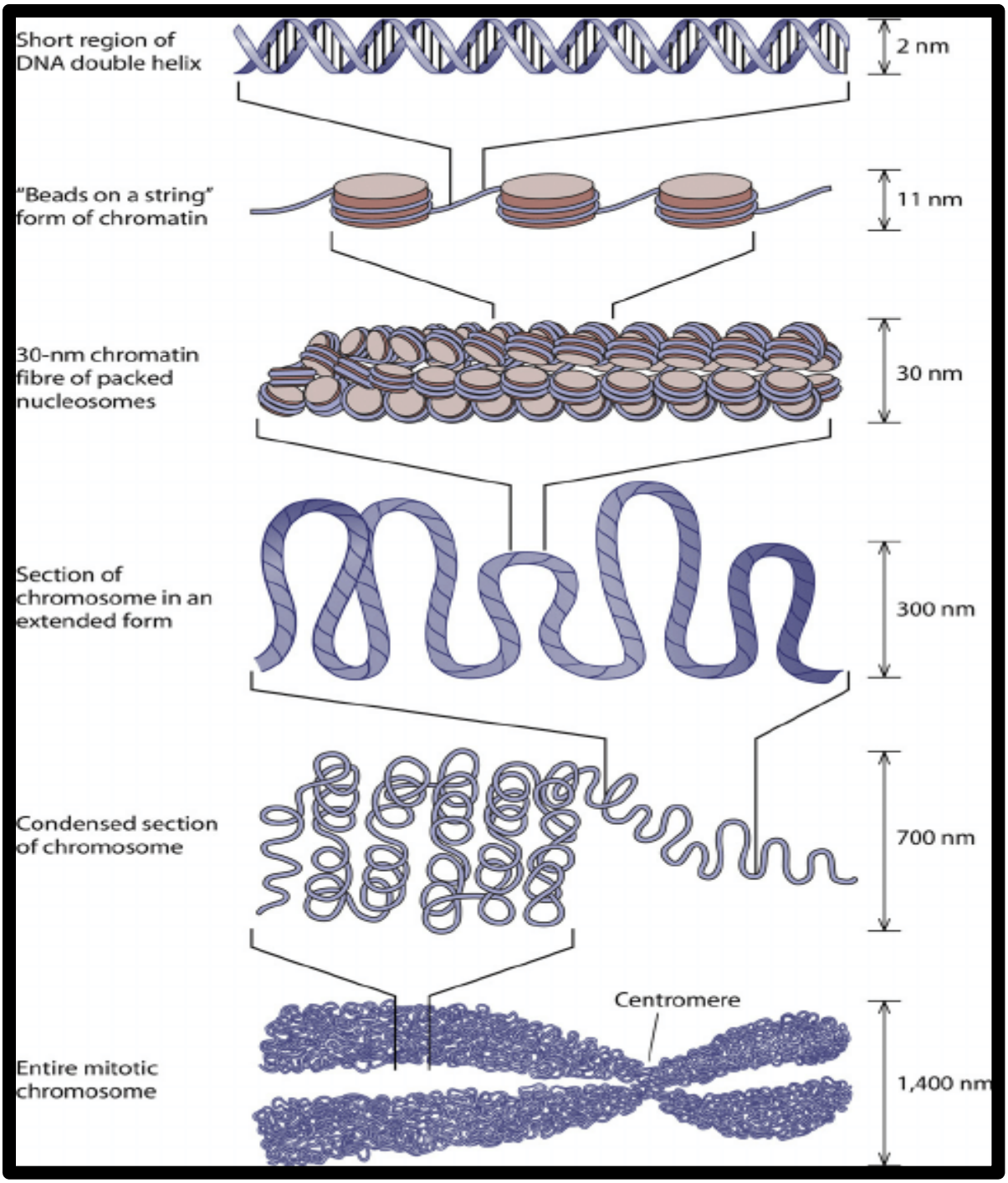


Figure 14: The highest order (level) of organization or folding of a DNA molecule.

Look! Hereabove in Fig. 14, the thickness increased from 2 nm to 1,400 nm due to repeated folding and refolding of the DNA molecule up to 10, 000 times on itself [5-14].

Table 1: Chromosomal Histone Proteins versus Chromosomal Nonhistone Proteins.

Histone Proteins	**Nonhistone Proteins**
Definition Histone proteins are the chief protein components of chromatin.	**Definition** Nonhistone proteins are the remnants in chromatin, after all the histone proteins have been removed.
Types There are five major types of histone proteins**:** H1 (or H5), H2A, H2B, H3, and H4.	**Types** They include scaffold proteins, DNA polymerases, heterochromatin protein 1, and polycomb. They also include several other structural, motor and regulatory proteins.
Functions They act as a spool around which the DNA can bind to form structures called nucleosomes.	**Functions** They help in organization and compaction of **chromosomes** into higher-order structures.
They play a major role in protecting the DNA from tangling & damage.	Not involved in the protection of DNA.
Other functions include gene regulation and DNA replication.	Other functions include nucleosome remodeling, nuclear transport and interphase transition.
Nature of the Protein They are highly basic in nature, making them highly soluble in water.	**Nature of the Protein** They are acidic in nature.
Conservation The histone proteins are conserved across the species.	**Conservation** Nonhistone proteins are not (i.e., less) conserved across the species.

In addition to the core histones, there are “linker histones” called H1 & H5. The linker histones present in all multicellular eukaryotes are the most divergent group of histones, with numerous cell type-and stage-specific variant. Linker histone H1 is an essential component of chromatin structure. H1 links nucleosomes into higher order structures. Histone H5 performs the same function as histone H1, and replaces H1 in certain cells. Because linker histones bind to internucleosomal DNA they facilitate interactions between individual nucleosomes. In accordance with its higher affinity for chromatin, histone H5 is a more potent inhibitor of nucleosome mobility than histone H1.

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 of video 3, etc.

Video (a): Meiosis & Crossing Over_

Video (b): Genetics - Chromosome Structure and Types - Lesson 18 Don't Memorise

Video (c): Chromosome chromatin and chromatid

Video (d): Genetics, epigenetics and disease

Figure 15: Expression of human **genome** by way of its genes and its sensitivity to effects of epigenes & chromosomal proteins[15d, and 16b].

From a DNA Molecule to Nitrogenous Bases:

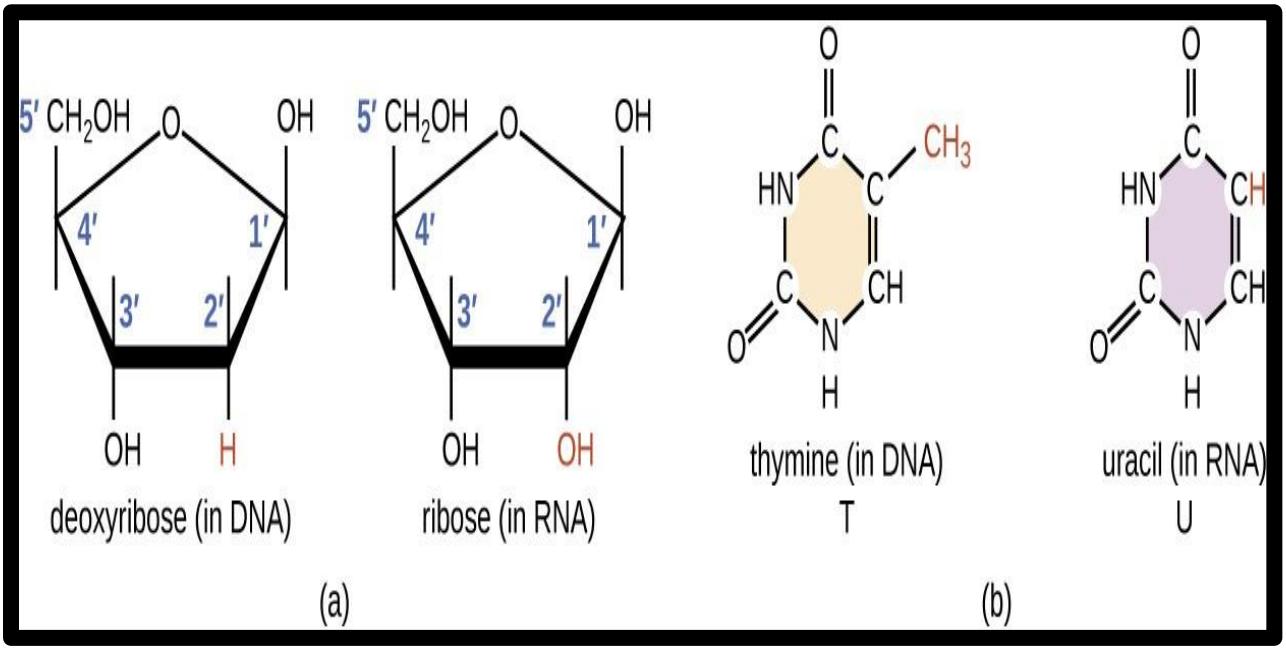


Figure 16: Structural formula of 5-carbon sugar in DNA vs RNA.

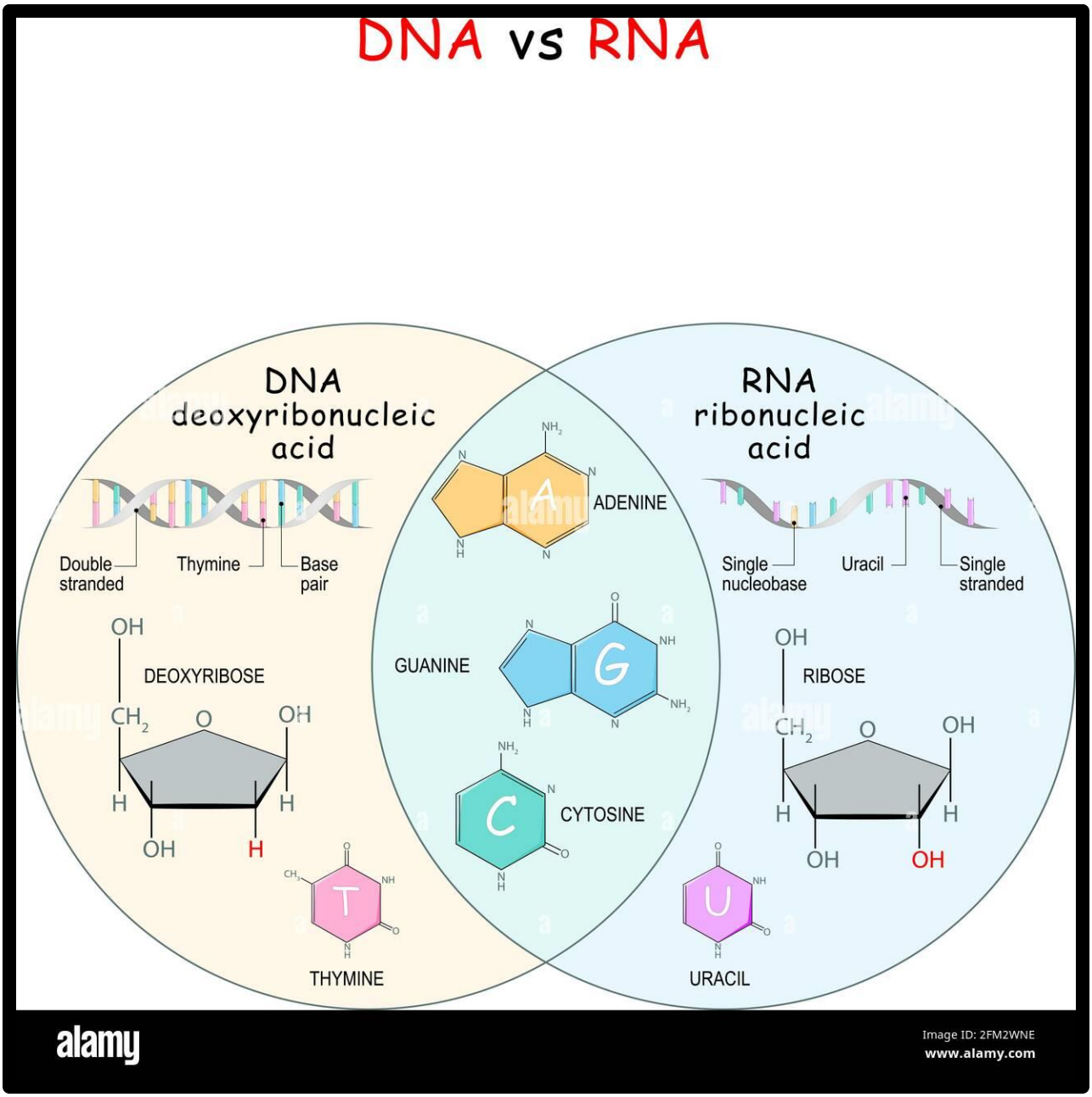


Figure 17: Structural formula of 5-carbon sugar in DNA vs RNA.

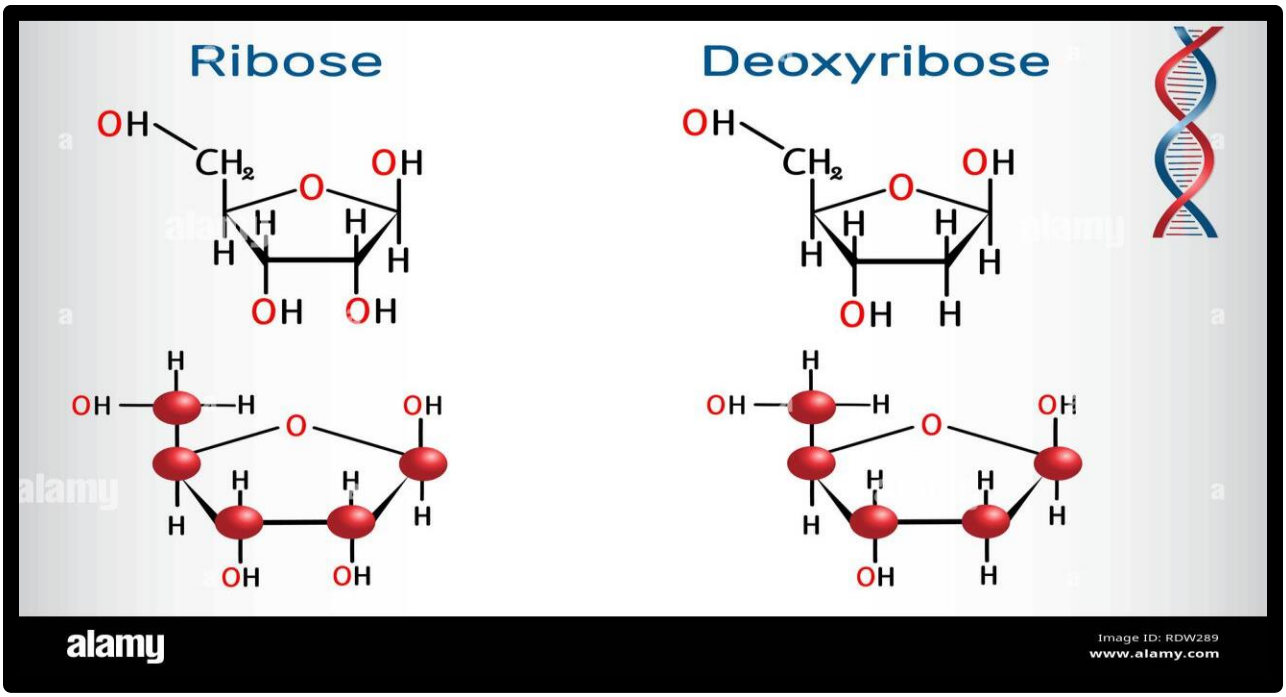


Figure 18: Structural formula of 5-carbon sugar in DNA vs RNA.

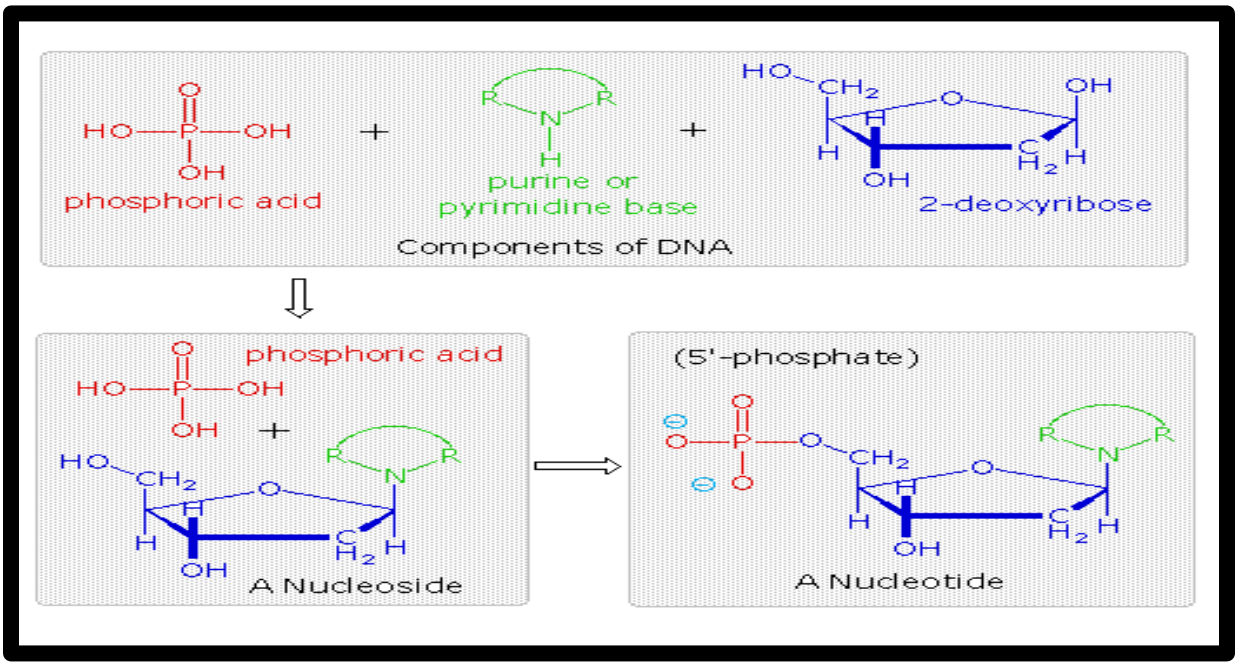


Figure 19: Formation of a nucleoside and then that of a nucleotide.

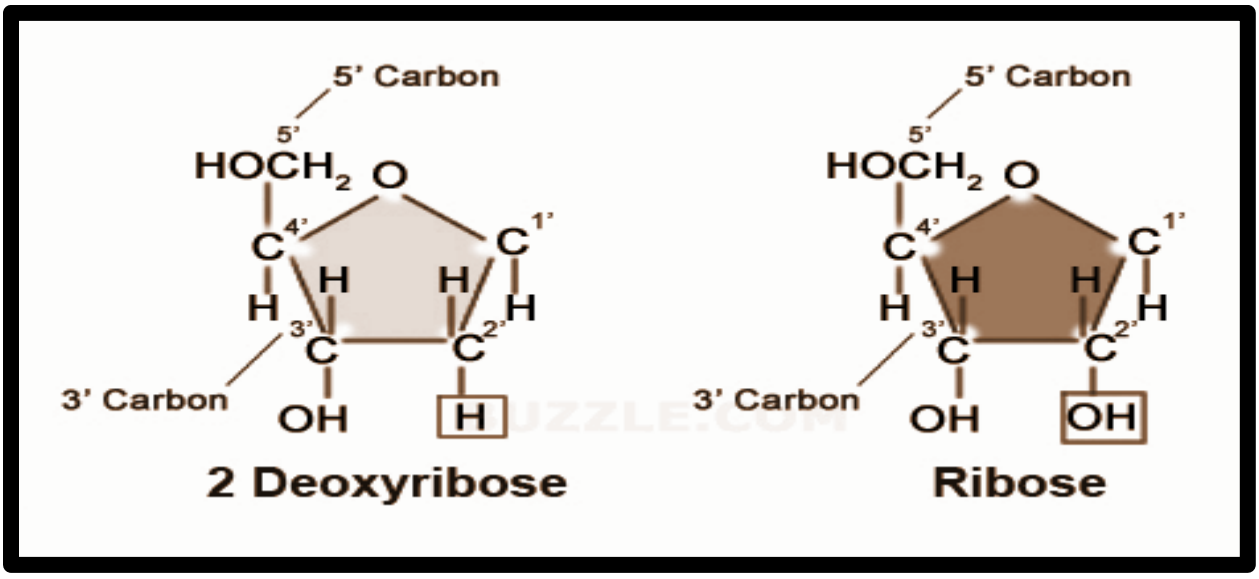


Figure 20: 5'& 3' Labelled structural formula of 5-carbon sugar in DNA and RNA respectively.

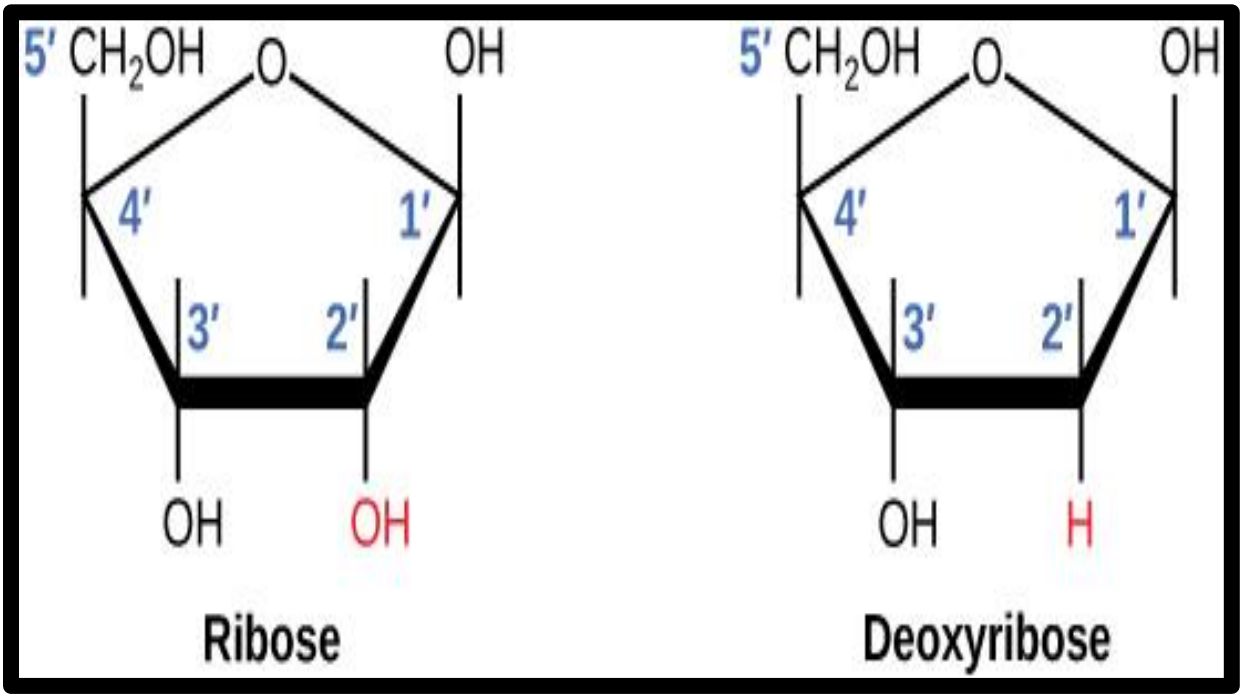


Figure 21: Labelled 5-carbon sugar in RNA & DNA respectively.

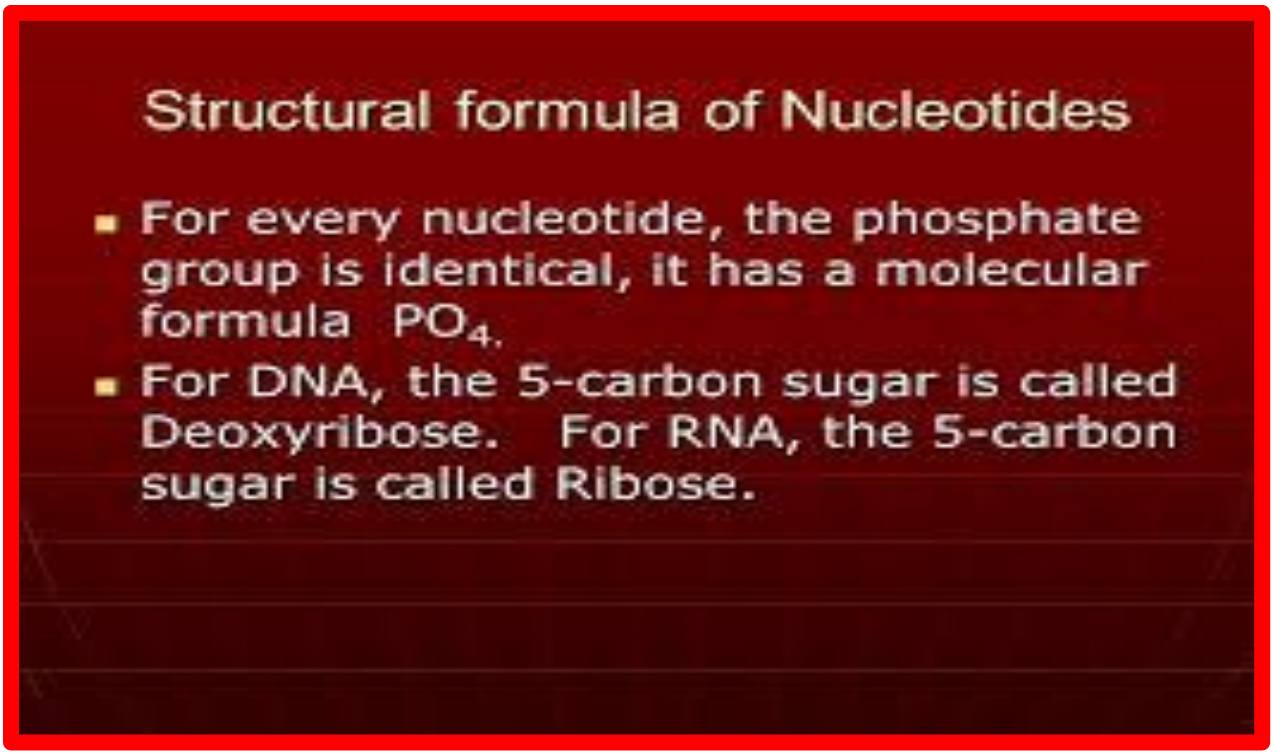


Figure 22: The phosphate group & the 5-carbon sugar in the structural formula of nucleotides.

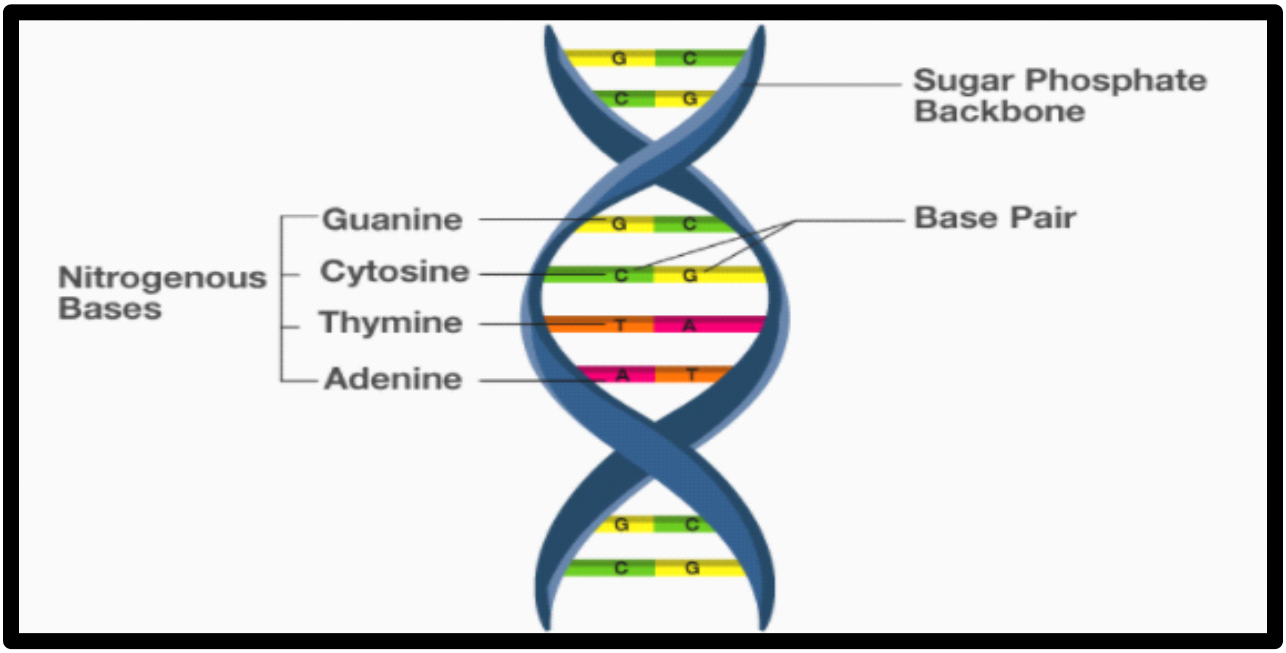


Figure 23: Morphology of a DNA segment showing Sugar Phosphate Backbone, Nitrogenous Bases and Base Pairs.

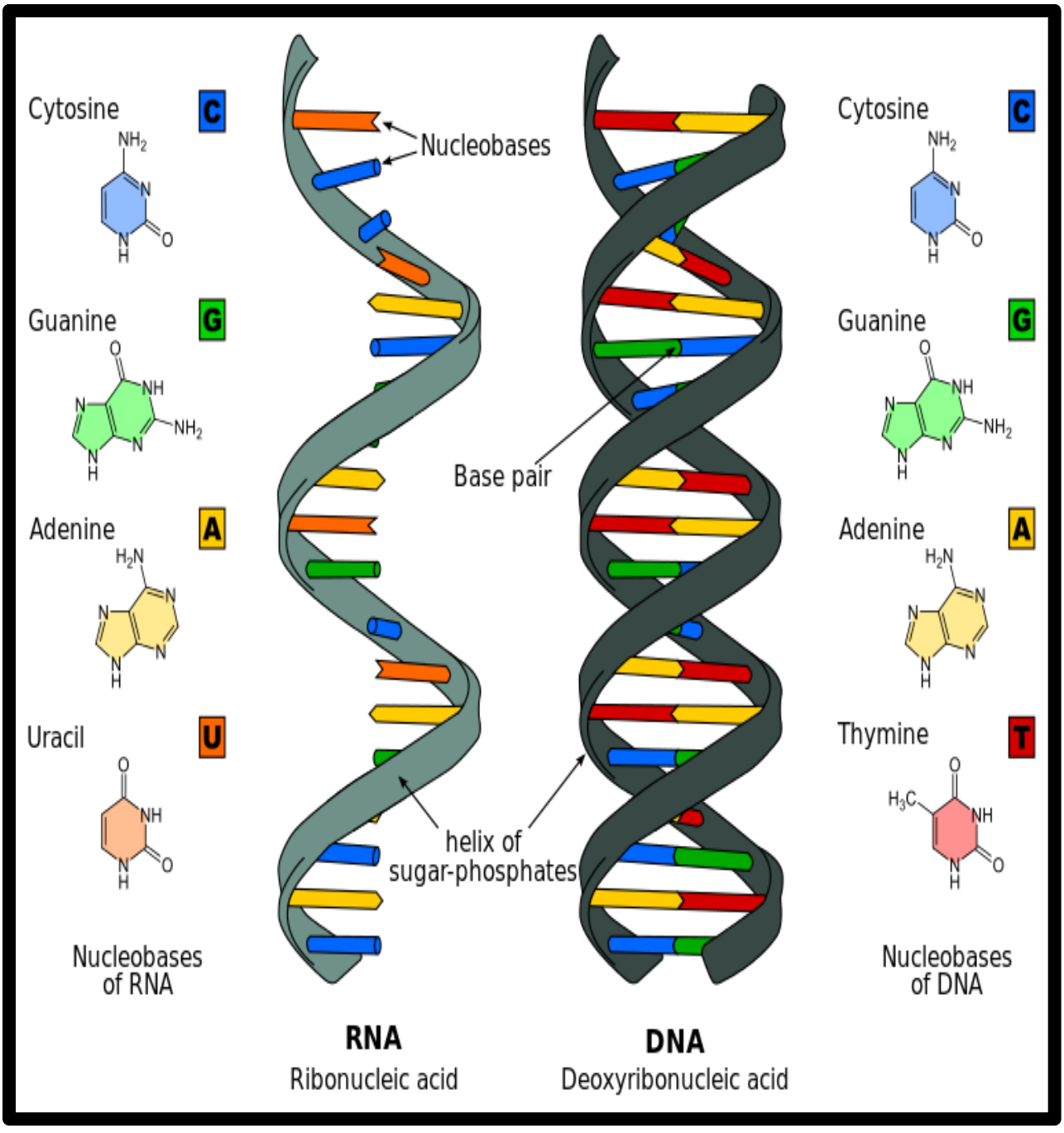


Figure 24: Full morphology of RNA vs DNA in typical sampled portions.

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 of video 3, etc.

Video (a): 10 reasons I love living in China

Video (b): China vs USA - Who Would Win 2021 Military Country Comparison

Video (c): China vs USA - Who is the Real Superpower

Video (d): Living in China vs Living in America - This is truly shocking .. CN

Video (e): Searching for HOMELESS People in China

Video (f): Why Do Americans Live In China STREET INTERVIEW

Video (g): How China (Actually) Got Rich

Video (h): How China Became So Powerful

Video (i): How did China become a superpower

Video (j): China's Anti-Poverty Miracle

Video (k): The World according to China VPRO Documentary (1)

Video (l): 14 children, one teacher killed in Texas elementary school mass shooting USA TODAY

Video (m): 19 children, two adults killed in US school shooting ABC News

Video (n): America & the rise of gun violence Why does gun terror persist in the US Texas School Shooting

Video (o): Gunman kills 21 in Texas school shooting as Biden pleads for stricter gun laws 9 News Australia

Video (p): US 18 children killed in Texas elementary school shooting, gunman shot dead Latest English News

Video (q): What is behind the rise in gun related violence in the U S.

Video (r): What is Trauma

Video (s): How China became one of the safest countries in world

Figure 25: Surprizing & drastic growth of **China** in economy, science and technology; and also, being one of the safest countries in the world for its residents & tourists.

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 of video 3, etc.

Video (a): **What If Russia Landed On The Moon First**

Vireo (b): **Who Won the Space Race - U_S.A or U.S.S.R.**

Video (c): **Exclusive Full Interview With Russian President Vladimir Putin**

Video (d): **China's Zhurong vs_ NASA's Perseverance Rover Tech in Mars Space Race_WSJ**

Video (e): **China's Answer to the Aging International Space Station The Tech Behind Tiangong_WSJ**

Video (f): **Space China's Chang'e 5 Lunar Lander Finds First On-Site Evidence Of Water On Moon's Surface**

Video (g): **Why a China Space Race is a Good Thing**

Video (h): **Why China can build its own space station**

Figure 26: The performance of three developed countries (**Russia**, **USA**, & **China**) in space science.

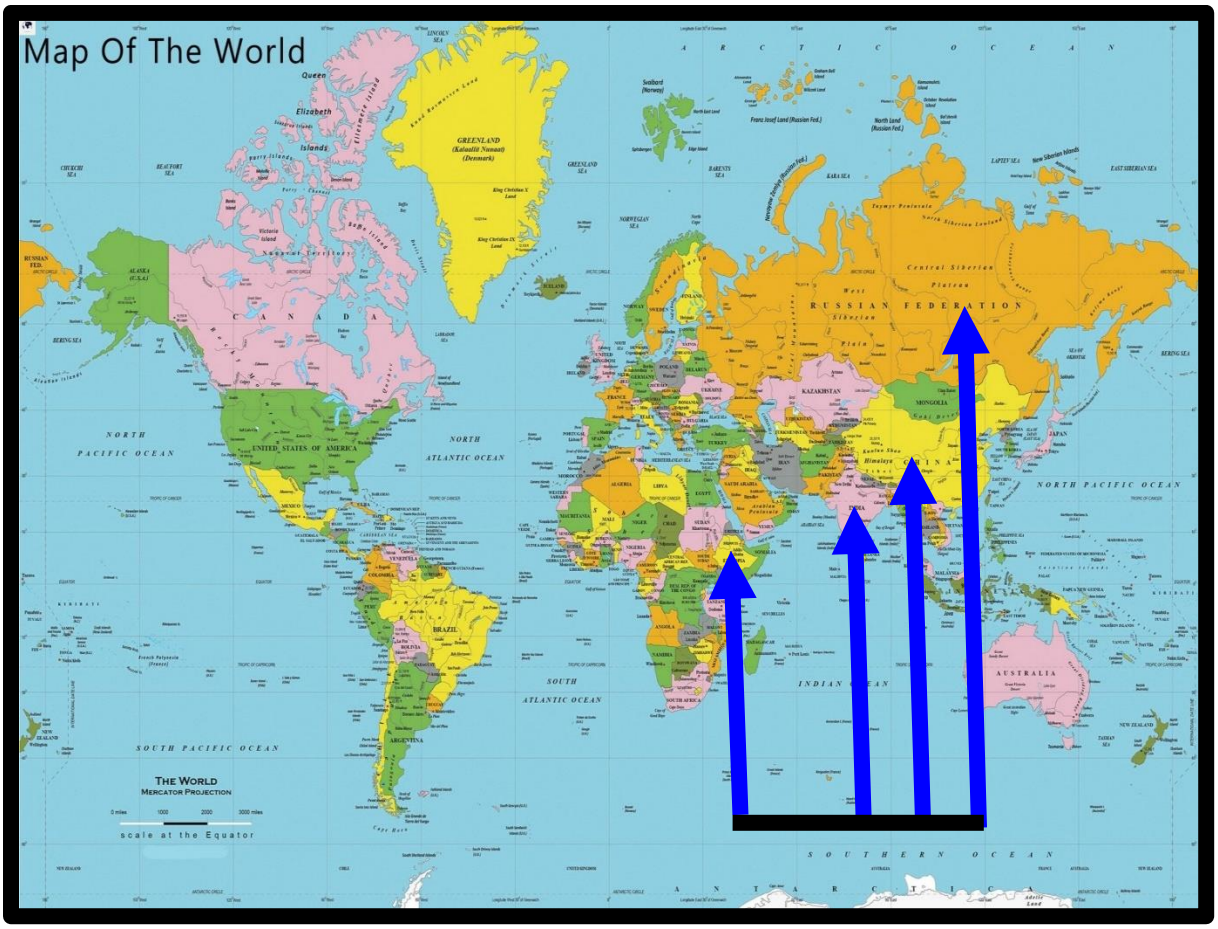


Figure 27: Map of the world with arrows showing the 4 countries (**India, China, Russia** & **Ethiopia**) where each of them is a superpower in the aspects mentioned in the **Conclusion Section** of this paper.

Discussion

Level of Organization from a DNA Molecule to a Chromosome:

Epigenetic changes can cause the genes to be turned on or off and can influence the production of proteins in certain cells, ensuring that only necessary proteins are produced. For example, proteins that promote bone growth are not produced in muscle cells. Patterns of epigenetic modification vary among individuals, different tissues within an individual, and even different cells.

A common type of epigenetic modification is called DNA methylation. DNA methylation involves attaching small molecules called methyl groups, each consisting of one carbon atom and three hydrogen atoms, to segments of DNA. When methyl groups are added to a particular gene, that gene is turned off or silenced, and no protein is produced from that gene.

Compounds binding to a gene, can lead to abnormal gene activity or inactivity, they cause genetic disorders. Conditions including cancers, metabolic disorders, and degenerative disorders have all been found to be related to epigenetic errors. Scientists continue to explore the relationship between the genome and the chemical compounds that modify it. In particular, they are studying what effect the modifications have on gene function, protein production, and human health.

Cancer is a group of diseases arising in part from:

►**1.** Chromosomal abnormalities and mutations in tumor-suppressor genes & oncogenes; and

►**2.** Epigenetic modifications.

An oncogene is a gene that has the potential to cause cancer. Oncogenes are mutated forms of normal cellular genes (proto-oncogenes).

Proto-oncogene $\xrightarrow{\text{pathogenic mutation}}$ **oncogene** $\xrightarrow{\text{becomes a cancerous gene}}$ **cancered cell.**

Now, the cancerous gene inside its cancered cell is an **autointracellular pathogenic gene** because it caused the disease **cancer** in the cell and then the **Genome** inside this cancered cell is also an **autointracellular pathogenic Genome** because one of its genes has become cancerous.

Development of cancer from epigenetic-mechanisms can be put into three categories**:**

● the **1st** is suppression of normally active genes;

● the **2nd** is the activation of normally suppressed genes;

● the **3rd** is the replacement of core histones by specifically (epigenetically) modified histone variants. Histone acetyltransferase enzymes can also acetylate non-histone proteins each of which had been known to cause cancer development when altered (exposed to epigenetic modification).

The effect of **dominant allele** on the expression of the **recessive allele** is analogously similar to the expressive effect of **methylated or acetylated gene** (or chromosomal protein) on the expression of the same **gene's unmethylated or unacetylated** state in the human **Genome**. A gene, DNA, or Genome is a chemical molecule to which another chemical compound,i.e., in this case, the **epigenetic group** (functional group) can attach or bind and change its functional property (or chemical property) of reaction. In this study, the epigenetic groups such as methyl group and acetyl group are functional groups that attach to genes (or chromosomal proteins) of the human **Genome** and change their functional properties. For example, in the 5-carbon sugar **DNA** if the functional group **–OH** attaches to **2'-C**, replacing **–H** atom, then it will become an **RNA** that differs in functional (chemical) property of reaction from that of **DNA**!! The chemical events of this is analogously similar to the attachments and the consequences by **epigenetic** functional groups.

Because epigenetic modifications are reversible, therefore, diseases such as cancer caused by epigenetic changes can be counteracted with epigenetic treatments. For example, drugs aimed at

histone modifications are called deacetylase (HDAC) inhibitors. HDACs are enzymes that remove the acetyl groups from DNA so as to condense chromatin and stop transcription. In this way, HDAC inhibitors turn on gene expression. The most common HDAC inhibitor drugs include phenylbutyric acid and valproic acid.

Chromosomal proteins (both histones & nonhistone proteins) are the translations of the human genomic transcripts. Note that the **Genome** synthesizes each individual person of *Homo sapiens* using its **transcripts** & its **protens** translated from its transcripts. Thus, chemical, physical, or both modifications (changes or alterations) caused by attachment or binding of epigenetic groups such as acetyl, methyl, phosphoryl, ubiquityl, and sumoyl on a gene of a human Genome's **DNA** or **chromosomal protein** (without changing DNA sequence of the genome) are seen as the resultant outcomes in the human individuals synthesized by that **Genome**.

One concept of the British Presenter when he was dealing with epigenetics in "The Royal Society Prize Lecture 2012" was observed to be a serious mistake. He said that 99% of human **Genome** is junk [15d]. He was totally wrong with that conclusive statement. In fact, 100% of the genome is valid & no part of it is junk!! For a British Prize recipient presenter, it is nonsense to state that 99% of human **Genome** is junk (useless or worthless) and it is not less than an accident of aircraft crash for him!! This British presenter of prize lecture will not have to apologize for his committing the aforementioned absurd error but he will have to update his scientific consciousness with the **true sciences of Genomology** very soon so as to free himself from the **fake sciences of Biology** derived from the **Greek** word erroneously!! When we deliver lectures of scientific work, we have to be careful not to confuse or mislead scientists or learners respectively. For instance [16b], the video lesson presenter ought to use submetacentric chromosome for explaining **P-arm** and **Q-arm** instead of the metacentric one she used to explain.

It must be clear that chromosomal proteins (both histone & nonhistone proteins) are part of the **Genomic** functional pathway whereas epigenetic groups are external and nongenomic chemical compounds added to genomic reaction (metabolism). We know that **Genome** synthesizes genomic-things using its **transcripts** and its **proteins** translated from its transcripts. Thus, chromosomal proteins are translations of the Genome's transcripts and are directly & indirectly involved in synthesizing as well as in signaling regulatory functions. Because of this reality, epigenetic chemical groups & chromosomal proteins are two completely different types of reactants but their effects are responded to by the same supersensitive **Genome**. In short, attachments of chemical groups such as –methyl group, or -acetyl group onto a **gene** in a DNA molecule (or to a chromosomal protein) modify the function of gene referred to as **Gene Expression** or modification of the chromosomal protein function of the human **Genome**. As mentioned above, the effects of these epigenetic attachments to the gene (or chromosomal protein) of the human **Genome** are analogously similar to the effect of **–OH** group attachment instead of **–H** atom to 2'-carbon of the 5-carbon sugar in the nucleotide of RNA being responsible for

functional differences (modifications) between DNA & RNA where the nitrogenous base of RNA is Uracil (U) instead of Thymine (T).

The main aim of universal reactions of matter is to improve or to make better the living standards and to create the safest conditions possible for humans in each country of the planet (Earth). If a country is characterized by spectacular collapsing of bridges, homelessness of its residents or citizens who hopelessly live on roadsides in wastes (garbages), anarchism, free market of selling & buying guns what must be allowed by law to be only in the hands of trained professional forces of **Police** & **Defense**, mass-killing of students & teachers in schools by gunmen, trauma of children & their mothers, looting in supermarkets, residence areas of cities with full of garbage, and so on, then it is that country's **syndrome** of deteriorating failure in economy and in the management of leadership. Based on the main aim of universal reactions of matter, **China** has become the model country on Earth with surprising & drastic growth in economy, science and technology; and also, being one of the safest countries in the world for its residents & tourists [17].

CONCLUSION

 Chemical, physical, or both modifications (changes or alterations) caused by attachment or binding of chemical (epigenetic) groups such as acetyl, methyl, phosphoryl, ubiquityl, and sumoyl on genes of human Genome or on **chromosomal proteins** of man (without changing DNA sequence of the genome) are referred to as **Epigenetic Modifications** in the human individuals synthesized by that **Genome** whereas the study of epigenetic modification & the causative agents of it is called **Epigenetics**, or **Epigenomics** at the level of genome.

 The fact that the "Royal Society Prize Lecture 2012" presenter stated that 99% of the **Genome** is **"junk"** was an excellent evidence to say that he was correct in his observations of epigenetic modifications but ignorant of **genomic reactions** & **sciences of Genomology [15d]**.

 Actually, the epigenetic (chemical) groups that attach or bind on genes of human genome or on chromosomal proteins of man are external environmental factors and are not structural components of the human genome although they cause heritable & reversible spatiotemporary alterations. Epigenetic modifications are changes caused by external environment by affecting (turning genes "on" or "off") the way our genes of genome work.

 Epigenetic groups such as acetyl & methyl groups are nonself and nongenetic being components of environment such as of the diet we take.

 Even if a single gene becomes a cancerous gene in a cell, then the **Genome** in that cancered cell is known as **autointracellular pathogenic Genome** because one of its genes has become cancerous.

 Epigenetic groups' being able to modify/change functional directions of genomic reactions in man is an spectacular & concrete evidence for the fact that **Genome** is a **supersensitive** molecular machine capable of automatically synthesizing itself and all species of genomic-things from viruses up to humans.

 Both **immune responses** to foreign antigens & **epigenetic modifications/changes** caused by the binding of epigenetic chemical groups (such as acetyl and methyl groups) onto DNA & chromosomal proteins are visible evidences about the functional **supersensitivity** of the same **Genome** in an individual person.

 The **syndromes** caused by genomic diseases/disorders and **symptoms** caused by pathogenic infections are additional & actually demonstrative genomic responses or reactions from our genome showing the **supersensitivity** of the human **Genome**.

 **Genome** of **Feleke Eriso** belongs to the set of human genomes with the best desirable changes or arrangements & sequences which has synthesized his **mind** capable of creating **superscience (science of genomic reactions)**, being free from **genomic diseases** or **disorders** known to cause learning disabilities in humans [5]**!!**

 The domain of **genomological sciences** consists of**:**

►pure genomology & genomotechnology,

►medical science, and

►agricultural science.

 **Updated confirmation**, based on sincerely and spectacularly investigated 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** 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 Figures **15**, **25**, and **26**.

(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.

Vibeo 1: Engedawe Werku | Merkuze New እንግዳው ወርቁ | ምርኩዝ ነው - New Ethiopian Music 2022

Video 2: Ethiopian music, Zafu Kiros-anihay-2019

Video 3: NEW AFAR MUSIC MAHAMADE - QAFAR BAXAY MISLI BAXAY _ New Afar song 2022

Video 4: የአፋር አናብስት በግንባር ያሳዩ ድንቅ ጀግንነት

Video 5: ክብር ምስጋና ታሪካዊ ገድል ለፈፀሙው ለጀግናው የአፋር ህዝብ እና ልዩ ኃይል ።

Video 6: Abraham Gebremedhin Ethiopia Hagere Lyrics አብርሀም ገብረመድህን ኢትዮጵያ ሀገሬ በግጥም

Video 7: Berhe Amare - Kihdet (Official Video) Ethiopian Tigrigna Music

Video 8: Zenebech Tade - sem mar - ዘነበች ታዴ ስሞ ማር - New Ethiopian Music 2021

Video 9: Beruke Alemenhe Enbi Bel ብሩክ አለምነህ እንቢ በል - New Ethiopian Music 2022

Video 10: Betty K - Ngeregn ንገረኝ - New Ethiopian Music 2022

Video 11: ምህረት ጥላሁን-እንጃለት (Mihret Tilahun-enjalet) - New Ethiopian music 2022

Video 12: ጫኔ ንጉሴ [አለናት) chanie negussie alenat_

Video 13: Ethiopian Music Amsal Mitike አምሳል ምትኬ አንድ ናት ኢትዮድያ New Ethiopian Music 2022

Video 14: Tesfaye Adugna Yam (ቅኔ ናት)

Video 15: Teddy Afro - mare mare Remix ♥ ቴዲ አፍሮ - ማሬ ማሬ ♥ (Ethiopian best remix music)

Video 16: ♥♥♥ምርጥ የጎጃም እስክስታ♥♥♥(Official video 2022)

Video 17: ምርጥ የጎጃም ሙዚቃ Jan 3, 2022

Video 18: dubale melak ዱባለ መላክ አማን ነወይ aman newy New Ethiopian Music 2022

Video 19: Abebe Yitbarek - Yinegal ይነጋል - New Ethiopian Music 2021

Video 20: Habtamu Tebeje - Fano Ande Amara | ሀብታሙ ተበጀ - ፋኖ አንድ አማራ

Video 21: Fasil Demoz - Hmim - ፋሲል ደሞዝ - ህምም - New Ethiopian Music 2021

Video 22: Awtar Tv - Mastewal Minalel ማስተዋል ምናለ - Altegnam Le Hagere - New Ethiopian Music Video 2022

(B)

Video 23: Ethiopian Music_Hikma Getachew ሂክማ ጌታቸው (አናፍርም) - New Ethiopian Music 2022

Video 24: Anteneh Baylie - Fano Biyaguremerm_አንተነህ ባይሌ - ፋኖ ቢያጉረመርም_Ethiopian Music 2022

Video 25: Ethiopian Music Tiruwork Ayele WUBETE (ጥሩወርቅ አየለ) ውበቴ New Ethiopian music 2022

Video 26: Habtamu Tebeje - And Amhara (Fano) With Lyrics | ሐብታሙ ተበጀ - አንድ አማራ (ፋኖ) Ethiopian Lyrics Music
Video 27: New Hot Music - Sintayehu Tilahun aka "Hibongo" - Dereben
Video 28: Awtar Tv - Temeche Negus - ተመቸ ንጉስ | እነ ልክ አያውቁ - New Ethiopian Music 2022

Video 29: Biruktawit Shimelis - Kef Yibel | ብሩክታዊት ሽመልስ - ከፍ ይበል | New Ethiopian Music 2022
Video 30: Bereket Mengisteab Entenewekwa_እንተነውሐ'ኪ New Eritrean Guayla Music Remix 2022

Video 31: Bereket Mengisteab Harbegna Krarey_New Eritrean Guayla Music Remix 2022

Video 32: New Eritrean Music - Russom GGiorgis - Belesna Mkrti_በለስና ምቅርቲ ርእሶም ገጊዮርጊስ 2020

Video 33: New Eritrean Music Russom GGiorgis - Ata Elilye - ኣታ ዕልልየርእሶም ገጊዮርጊስ 2022

Video 34: Mihreteab Michael_New Eritrean 2022_Fesahsah_ምሕረትኣብ ምካኤል ፈሳሕሳሕ

Video 35: Mihreteab Michael New Eritrea Music 2021 (Ayselln) ኣይሰልልን

Video 36: Awel Aman - Banderay_ባንዴራይ ብ ኣወል ኣማን - New Eritrean Music 2022

Video 37: EMN - Robel_Gebremariam_Hager_9(ሃገር 9) New Eritrean Music 2022 - Eritrean Media Network

Vireo 38: Eseyas Debesay - Ilekum Niere - New Eritrean Music 2022

Video 39: Awel Said - Wedi Gomida_ወዲ ጎሚዳ - ኣወል ስዒድ NEW 2021 Eritrean Poem Monologue

Video 40: ERi-TV ነቓጽ ፖለቲካ - ግጥሚ ኣወል ስዒድ ብኣጋጣሚ ጽምብል 40 ዓመት ምምስራት ሃማደኤ - Artist Awel Said Poem Stern Politics

Video 41: Tesfaldet Mesfin - Arha Gemel - New Eritrean Music 2022

Video 42: Amt Enterteinment New Eritrean_ Music Live_Music_robil goytom(Warsa) ሮቤል ጎይትኦም(ዋርሳ)

Video 43: Eri Art - Sami Ezra (Maaro) ማዓሮ - New Eritrean Traditional Music (Official Audio) 2020

Video 44: ተኽለ ክፍለማርያም - ወዲ ትኹል - ሃገር ምስ በልኩም ዘይትምለሱ_Tekle Kflemariam (wedi tukul)_Eritrean music , ERi-TV

Video 45: Eritrean Music - ባጽዕ ስየ - ተኽለ ከፍለማርያም (ወዲ ትኹል)_Bats'e Siye - Tekle Kiflemariam (Wedi Tkul)

Video 46: ኣይትጠምቱለይ - Ftsum Mobae ft Meron Estefanos New Eritrean music 2021 Aytitemutley

Video 47: Best Eritrean guayla

Video 48: EMN - ዑደት ኣባላት ማጨሎ ናብ ባድመ 2ይ ክፋል - Eritrean Media Network

Video 49: Eritrea Music-Amanuel Goitom - Hot Gayla -ጓይላ - Live on stage-2022

(C)

Video 50: **Isaak Okbay - Kemti Limud ኢሳቕ ዑቕባይ ከምቲ ልሙድ New Eritrean Music 2022**

Video 51: **Saeyet Tv - Meron estifanos Zemach kwnnet New Eritrean Music video 2022 ብሜሮን ዘማች ክውንነት**

Video 52: **Melake Abraham - Areadom መልኣከ ኣብርሃም (ኣርዓዶም) - New Eritrean Music 2022**

Video 53: **Nati TV - Orion Salih l kulu adey {ኩሉ ዓደይ} - New Eritrean Tigrigna Music 2022**

Video 54: **New Eritrean music 2018 Maebel Selam Wedi Tkul - ማዕበል ሰላም**

Video 55: **New Eritrean Music 2022 Dirar Gyesus (Eritrawnetey) ድራር ገብረእየሱስ ኤርትራውነተይ**

Video 56: **Eden Kesete (ኤደን ከሰተ) Hot Guyla ጓይላ Eritrean music Live on stage-2022**

Video 57: **Eritrean Concert in Addies Ababa22_ Mai 2022**

Video 58: **በዓል ናጽነት ኤርትራ ኣብ ኣዲስ ኣበባ - Hot Guayla - Rezene Alem New Eritrean concert 2022**

Video 59: **ዛ ኢሪትራና ከንደይ ታሓሪ ኣብ ኣዲስ-ኣበባ ማዓልቲ ናጽነት 2022 Eritrea music**

Video 60: **Helen Meles - New Eritrean Concert 2022 ብመኽንያት በዓል ናጽነት**

Figure 28: (A), (B), and (C) Musical films displayed in honor of the uniquely automatic molecule termed **Genome**.

References

[1]. Guiral P, Mahajan V, Lissaman AC, Ponnampalam AP. Histone acetylation and the role of histone deacetylases in normal cyclic endometrium. Reproductive Biology and Endocrinology. 2020; **18**(84): 1-21.

[2]. Sterner DE, Berger SL. Acetylation of histones and transcription-related factors. Mi.crobiology and Molecular Biology Reviews. 2000; **64**(2): 435-459.

[3]. Verdone L, Caserta M, Mauro ED. Role of histone acetylation in the control of gene expression. Biochemistry of Cell Biology. 2005; **83**(3): 344-53.

[4]. Verdone L, Agricola E, Caserta M, Mauro ED. Histone acetylation in gene regulation.Briefings in Functional Genomics. 2006; **5**(3): 209-221.

[5]. Feleke E. Genomic diseases in humans and weaponizing universal reaction of matter. International Journal of Health and Psychology Research. 2022; **10**(2): 19-32.

[6]. Feleke E. Dismissal of the fake term called Living-thing by Genomic-thing and universal reactions of matter. European Journal of Biology and Medical Science Research. 2022; **10**(2): 8-44.

[7]. Feleke E. Genomology. European Journal of Biology and Medical Science Research. 2021; **9**(5): 1-25.

[8]. Feleke E. Human Genome Response or Immune Response: human genome & its discrimination of self from nonself. International Journal of Development Research. 2021;**11**(12): 52358-52368.

[9]. Feleke E. Genome-sequence, zygote, differentiation of embryonic stem cells into structurally and functionally different specialized body cells in humans: there is no "junk DNA" at aallin human genome!!!!International Journal of Current Research. 2017; **9**(07): 53764-53778.

[10]. Feleke E. Role of genome model in type 1 diabetes mellitus and pathogenic mutation. European Journal of Biology and Medical Science Research. 2019; **7**(3): 35-48.

[11]. Feleke E. Biological viruses are certainly aliving-things and switching off genomic metabolism.European Journal of Biology and Medical Science Research. 2018; **6**(5): 19-41.

[12]. Feleke E. Dynamic and detailed genome model of living-things.International Journal of Development Research. 2018; **8**(08): 22138-22152.

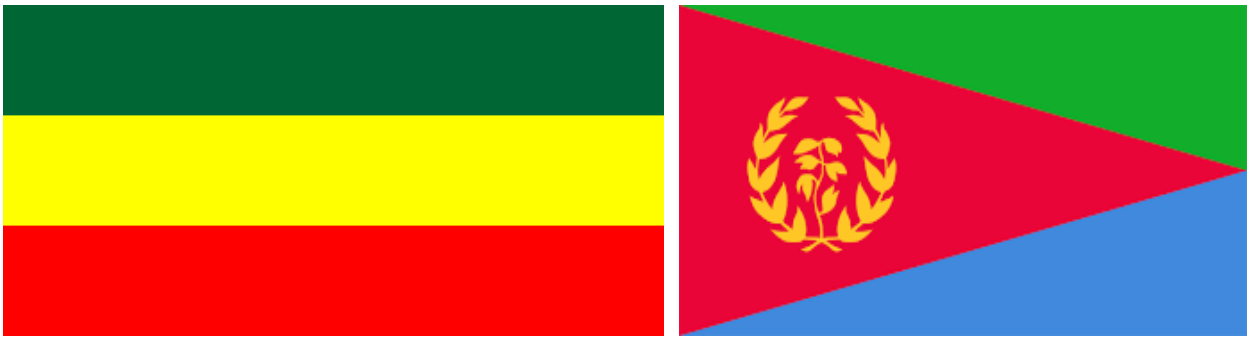
[13]. Feleke E. Immune responses against autointracellular pathogenic genomes or cancered cells. International Journal of Development Research. 2018; **8**(07): 21489-21496.

[14]. Feleke E. Genome model of living-things, definition of a living-thing, and the position of biological viruses among living-things. International Journal of Current Research. 2017; **9**(07): 53764-53778.

[15]. Figure 15, video (d) of this paper.

[16]. Figure 15, video (b) of this paper.

[17]. Figure 25, videos (a) to (s) of this paper.



(a) **(b)**

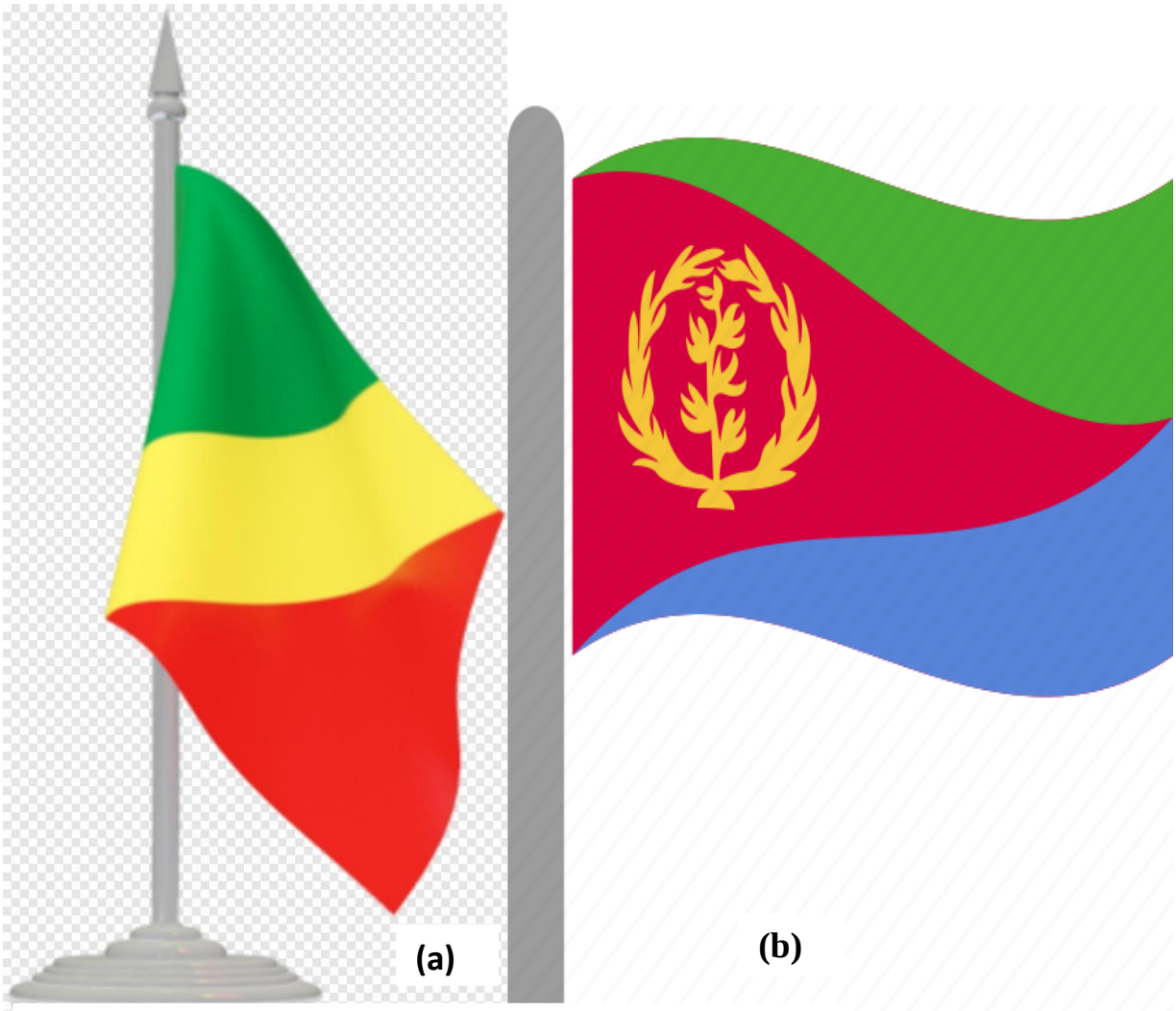


Figure 29: National flags of (a) Ethiopia; and (b) Eritrea.

Feleke Eriso Orbalo BSc, MSc, PhD

Feleke EO is:

►the **first** integrator of **Genomology**, **Chemistry**, & **Physics** by way of the same language of **Universal Reactions of Matter**,

►the **first** interpretor of the fact that both the **undesirable genomic changes** that result in genomic diseases and the **desirable genomic changes** in normal human genome which result in normal phenotypes in the individuals synthesized are **countably infinite** in potential number of kinds.

►the **first** genomologist to prove the fact that viruses are certainly **genomic-things**.

►the **first** scientist on this planet (Earth) to define what a scientist (living-thing or genomic-thing) is including himself as a genomic-thing, Before him scientists didn't know themselves but they were creating other sciences,

►the **first** scientist to interpret that **immune response**, **epigenetic modifications/changes**, **syndromes**, and **symptoms** observed are the evidential **supersensitive** responses of the human **Genome**.

►the father of all scientists of all sciences of this planet (Earth) with no chance for exception,

►the father of **Genome Model**,

►the father of **genomic-things**,

►the father of **genomosphere** that is in sunlight the whole 24 Hrs as the sun rises & sets in the genomosphere,

►the father of nonstopping automatic generations of **genomic reactions** in every species of genomic-things from viruses up to humans,

►the father of **superscience** (science of nonstopping automatic genomic reactions for countably infinite number of generations),

►the **universal omniscient** in dismissing fake sciences of **Biology** & in generating correct sciences of **Genomology**,

►the son of rain-bow colored **Ethiopia** by birth,

►one of the **Unique Educational Assets** of all human races of this planet that money cannot buy, and

►the Superpower in **Power of Mind in Genomological Sciences** in the entire world with no rival & claimer forever!!!!

★ **Genome is the only thing (molecule) that synthesizes all genomic-things & itself including you & me!!!!**