DNA BANANA EXTRACTION LAB ANSWERS

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What was the conclusion of DNA extraction from banana lab report? Answer: The banana mixture was more dense than the alcohol and sunk to the bottom. Due to this distilling of water, white stringy stuff, DNA was able to rise to the top. Human bodies have DNA just like a banana, obviously humans aren't bananas but banana and human DNA have a very similar structure.

What is the result of DNA extraction from banana? The DNA will appear white and will form a clump made of string-like strands that wrap onto the glass rod.

What is the role of the detergent in the banana DNA extraction? These are suggested responses to the questions in BLM M4: Banana DNA Extraction. 1. What is the role of the detergent? Detergent acts to pull apart the phospholipids and proteins that make up the membranes surrounding the cell and nucleus.

Why is a ripe banana a better sample for DNA extraction compared to an unripe banana? Because DNA is stored in cells, the amount of extractable DNA in fruit is decreased as cells are destroyed in the ripening process.

What is the summary of DNA extraction? There are five basic steps of DNA extraction that are consistent across all the possible DNA purification chemistries: 1) disruption of the cellular structure to create a lysate, 2) separation of the soluble DNA from cell debris and other insoluble material, 3) binding the DNA of interest to a purification matrix, 4) ...

What is the result of DNA extraction experiment? If there is lots of DNA, you may see a stringy, white precipitate. When an ice-cold alcohol is added to a solution of

DNA, the DNA precipitates out of the solution and if there is enough DNA in the solution, you may see a stringy white mass.

What is the purpose of the salt solution in the experiment? Using different types of salt in experiments serves various purposes such as influencing chemical reactions, controlling solution properties.

How can visually confirm the success of a DNA extraction experiment? Explanation: To visually confirm the success of a DNA extraction experiment, you can observe the presence of DNA through various methods: Pouring ice-cold ethanol or isopropanol into the test tube to observe white, precipitated DNA.

What is the function of DNA in banana? All living things, bananas and people included, pass on information from one generation to the next using the same basic material, DNA. Within every living organism, most cells contain a complete set of DNA instructions. The information in DNA tells our bodies how to develop, grow, and work.

Why is banana a best fruit for DNA extraction? We specifically use fruits like strawberries and bananas because they are octoploid and triploid, respectively. This means that each strawberry cell has eight sets of DNA, and each banana cell has three sets, so there is a lot available for extraction.

What is the purpose of using alcohol in our DNA extraction lab? What does the alcohol do? When molecules are insoluble (unable to be dissolved), they clump together and become visible. DNA is not soluble in alcohol; therefore, it makes the DNA strands clump together and become visible to the naked eye.

Why is protease added in DNA extraction? Proteinase K is used in DNA and RNA extraction because it is a proteolytic enzyme that can break down proteins, including those that are present in the cell membrane and nucleus.

What is the conclusion of extracting DNA from a banana? The stringy substance that you see is DNA! It has been removed from the millions and millions of cells that make up the banana. All living things have DNA. The more similar and closely related two living things are, the more similar their DNA is.

What are the possible impurities of banana DNA extraction? Banana plant is known to have high amount of polyphenols and polysaccharides, which interfere during usual DNA extraction process and usually remain as impurities in the DNA template preparations (Bryant, 1997).

Why do we crush the fruit in DNA extraction? Why? The physical smashing breaks the plant's cell walls and allows the cytoplasm to leak out.

What is the principle of DNA extraction? The basic principle of DNA extraction is largely about releasing the DNA present in the biological sample into an aqueous solution for subsequent analysis. However, further treatments such as purification and/or dilution are often required to make the DNA quality suitable for specific applications.

How do you analyze DNA after extraction? Assessing the quality and yield of DNA: The quality and yield of DNA are assessed by spectrophotometry or by gel electrophoresis. Spectrophotometry involves estimation of the DNA concentration by measuring the amount of light absorbed by the sample at specific wavelengths.

Why is detergent used in DNA extraction? DNA isolation is facilitated with the use of proteinase K enzyme, detergents, and chelating agents. Detergents dissolve the cell membrane and denature proteins. Proteinase K digests proteins, while chelating agents bind to bivalent cations of nuclease cofactors and thereby prevent DNA degradation by these enzymes.

How to extract DNA from bananas?

What fruit is best for DNA extraction? Foods like strawberries, bananas, kiwis, raspberries, and onions work particularly well in this lab. DNA can be isolated and extracted from other foods such as meats, other produce, and even processed foods such as corn chips and crackers.

Why is extracting DNA from banana cells different from cheek cells? CONCLUSION Despite the same methodology and procedure applied to both the cheek cell and the banana slice, the nucleic acid string from the cheek cell proved to be much harder to extract. This phenomenon might be associated to the difference in sample size of the banana slice and the cheek cell.

Why did we add salt to the DNA extraction solution? Salt is used in DNA extraction as salt helps in neutralizing DNA molecules. It makes the DNA molecules less hydrophilic i.e less soluble in water. Salt also helps in detaching protein molecules from strands of DNA.

What is the purpose of adding salt in extraction? Addition of a salt to the sample during the course of an extraction, also known as “salting out,” often quantitatively enhances the extraction yield. In fact, salting out provides the basis for the QuECHERS technique, though it is widely used in other extraction procedures as well.

Why does the salt stop dissolving in experiment? Salt dissolves in water up to a point when the solution becomes saturated (38 grams of salt per 100 grams of room temperature water). Beyond the saturation point, excess salt will not dissolve; it will remain visible as grains of salt. Salt or other dissolved solids will return to their solid state as water evaporates.

What is the purpose of DNA extraction in this experiment? The purpose of genomic DNA extraction is to separate this genetic material from the rest of the cell (proteins, RNA, cell membrane, etc.). Once purified, scientists can study individual genes, sequence the entire genome, modify sections of DNA, and more.

Why do we mash the banana in DNA extraction? Mashing the banana exposes a greater surface area from which to extract the DNA. The liquid soap is added to help break down cell membranes to release the DNA.

How does the DNA extraction lab work? To get the DNA from a cell, scientists typically rely on one of many DNA extraction kits available from biotechnology companies. During a DNA extraction, a detergent will cause the cell to pop open, or lyse, so that the DNA is released into solution. Then alcohol added to the solution causes the DNA to precipitate out.

What is the conclusion of DNA evidence? Conclusion. DNA evidence is easy to obtain because genetic material is found in all human cells, save red blood cells. As a result, when we leave behind small biological bits of ourselves, these bits can be used to identify us and link us to the places we've been.

What is the conclusion of the discovery of DNA? Although scientists have made some minor changes to the Watson and Crick model, or have elaborated upon it, since its inception in 1953, the model's four major features remain the same yet today. These features are as follows: DNA is a double-stranded helix, with the two strands connected by hydrogen bonds.

What is the conclusion of the DNA structure? Conclusion. In conclusion, DNA forms the basis for life. The discovery of the DNA structure has led to major strides in research, medicine, agriculture and many other fields. Given how important this structure is to our existence, it only makes sense that its description has affected so many areas of our lives.

What is the aim of DNA extraction lab report? The purpose of genomic DNA extraction is to separate this genetic material from the rest of the cell (proteins, RNA, cell membrane, etc.). Once purified, scientists can study individual genes, sequence the entire genome, modify sections of DNA, and more.

What is the summary of DNA analysis? Forensic DNA analysis involves the use of scientific techniques to extract, purify, and analyze DNA from biological samples collected from suspects, victims, and crime scenes. The analysis can take various forms, such as DNA sequencing, polymerase chain reaction (PCR), and STR (short tandem repeat) analysis.

How do you summarize DNA? Definition. DNA is a complex, long-chained molecule that contains the genetic blueprint for building and maintaining all living organisms. Found in nearly all cells, DNA carries the instructions needed to create proteins, specific molecules essential to the development and functioning of the body.

What did the DNA evidence prove? DNA is a powerful investigative tool because, with the exception of identical twins, no two people have the same DNA. Therefore, DNA evidence collected from a crime scene can be linked to a suspect or can eliminate a suspect from suspicion.

What is the conclusion of DNA as genetic material? Based on this and similar experiments, Hershey and Chase concluded that DNA, not protein, was injected into

host cells and made up the genetic material of the phage. Is that true for all viruses? Not necessarily. All living things (viruses not being considered living) have DNA as their genetic material.

How did scientists conclude that DNA is the genetic material summarize? The researchers used different radioactive elements to label the DNA and proteins in viruses. This allowed them to identify which molecule the viruses inserted into bacteria. DNA was the molecule they identified. This confirmed that DNA is the genetic material.

What is the conclusion of DNA quantification? Conclusions. The appropriate DNA or RNA quantitation method should be chosen based on many factors including availability of equipment, intended downstream application, and throughput. Some quantitation methods have the added benefit of enabling determination of the biological and chemical purity of a sample.

What is the summary of the DNA molecule? A DNA molecule consists of two long polynucleotide chains composed of four types of nucleotide subunits. Each of these chains is known as a DNA chain, or a DNA strand. Hydrogen bonds between the base portions of the nucleotides hold the two chains together (Figure 4-3).

How do scientists finally conclude that genetic material is DNA? Conclusion: Resultant radioactive and non-radioactive bacteria infer that the viruses that had radioactive DNA transferred their DNA to the bacteria but viruses that had radioactive protein didn't get transferred to the bacteria. Hence, DNA is the genetic material and not the protein.

What is the ending of the DNA? The ends of the DNA strand are called: the 5' end (said as "5 prime end") at the phosphate end.

What is the aim of DNA extraction experiment in bananas? The objective is to determine if the banana#s DNA denatures overtime. In this experiment, the bananas are categorized into three different ripening stages: the under-ripe, ripe, and over-ripe. If the banana is in the under-ripe ripe stage, then it is expected to have the most amount of DNA.

What is the main purpose of DNA extraction? The ability to extract DNA is of primary importance to studying the genetic causes of disease and for the development of diagnostics and drugs. It is also essential for carrying out forensic science, sequencing genomes, detecting bacteria and viruses in the environment and for determining paternity.

What is the purpose of extracting DNA from fruit? We will extract DNA from fruit to investigate how it looks and feels. This procedure is similar to what scientists have to do before they can use the information contained in this DNA. This information can be used to improve crops so that they are more resistant to disease, insect invasion or changes in climate.

Wind Loading: A Practical Guide to BS 6399-2

The British Standard BS 6399-2 provides guidance on the design of structures to resist wind loads. This article explores key aspects of the standard and addresses common questions related to wind loading design.

What is wind load?

Wind load refers to the force exerted by wind on a structure. It is a dynamic load that can vary in both magnitude and direction. Buildings and other structures must be designed to withstand the anticipated wind loads they may encounter in their lifetime.

How is wind load calculated?

BS 6399-2 provides a methodology for calculating wind loads based on:

- Site location and exposure
- Building geometry and size
- Wind speed and turbulence effects
- Internal pressure coefficients

The standard specifies factors and equations that engineers use to derive the design wind load for a specific structure.

What are the key factors influencing wind load?

- **Height:** Taller buildings experience higher wind speeds due to reduced surface friction and increased atmospheric turbulence.
- **Exposure:** Buildings located in exposed areas, such as coastal regions or open fields, are subjected to stronger wind loads.
- **Shape:** Buildings with complex geometries, such as tall and slender towers, can experience significant vortex shedding and aerodynamic forces.
- **Internal pressure:** Internal and external pressures within a building can affect the overall wind load on the structure.

What are the design considerations for wind loading?

- **Structural integrity:** Structures must be designed to resist the calculated wind loads without excessive deflection or damage.
- **Component design:** Individual building components, such as cladding, windows, and roofing, must also be designed to withstand the wind loads they may encounter.
- **Safety factors:** BS 6399-2 includes safety factors to ensure that structures can withstand wind loads with an acceptable level of reliability.

Conclusion

BS 6399-2 provides a comprehensive framework for designing structures to resist wind loads. By understanding the key factors influencing wind load and following the guidance outlined in the standard, engineers can ensure that structures are safe and resilient under varying wind conditions.

What does W202 mean on Mercedes? Mercedes-Benz W202 is the internal designation for a compact sedan/saloon manufactured and marketed by Mercedes-Benz between 1992–2001, as the first generation of the C-Class, now in its fifth generation.

What does Class C mean on a Mercedes Benz? C refers to 'compact' and when the model was first launched in 1993 it was the smallest Mercedes available. Since then the C-Class has been available in saloon, estate, coupe and convertible variants and has always been one of the most popular models for the brand.

What does the C stand for in C-Class Mercedes? So, when the C-Class was launched, it was then the most cost-effective model that was manufactured by the Stuttgart-based luxury carmaker. And since it was to be slotted in the D-segment category of cars, Mercedes gave it the name C-Class – where the “C” stood for compact.

Is the W202 a classic? The first generation Mercedes C-Class W202 is 30 years old and is already classified as a youngtimer. In 2023 the sporty Mercedes C 36 AMG will turn 30 and will also receive youngtimer status. A model becomes a classic (youngtimer category) 30 years after its launch.

Are Mercedes W202 reliable? Except for the rust, which can be a serious problem, the W202 is pretty reliable.

What does S and C mean in Mercedes? If it is a W204 then the S means "Sport" and the C means "Comfort" And contrary to previous models, Comfort mode will not bypass 1st gear - it will just alter the shift points of subsequent gears.

Which Mercedes C-class is best? When it comes to picking the best Mercedes-Benz C-Class variant, it would hands down have to be the C 220d. This is the entry-level diesel offering, and is offered with a 2.0-litre diesel engine. While the higher diesel variant also gets a 2.0-litre engine, it's tuned to make a lot more power and torque.

Is a C-Class Mercedes good? The C-class's ride quality and steering feel could both be improved, and rivals such as the BMW 3-series and the Audi A4 offer better road manners. But none of those issues detract much from the overall sense of quality and specialness that the C300 offers.

Is the Mercedes C-Class expensive to maintain? On average, maintenance costs for the Mercedes-Benz C-Class C 300 can range anywhere from $1,500 to $2,000 a year. The costs can vary depending on what kinds of services you're receiving and other factors.

Is the C-Class A luxury car? The C-Class is the standard for Mercedes-Benz, offering an excellent combination of luxury, comfort, performance, and affordability across all models in its lineup.

Which Mercedes class is best? Revered as the best Mercedes-Benz for those who demand nothing but the utmost in sophistication and performance, the S-Class stands out. It's not just a car; it's a statement of success and style.

What is special about Mercedes C-Class? A truly digital cockpit, the C-Class offers advanced touch controls and virtual voice assistant. The AMG Line's interior trim features sport seats with a distinctive horizontal sew pattern.

What is the rarest W202? The W202 Mercedes C55 AMG is one of the rarest vehicles to ever be produced by AMG, and it is believed that only 59 were produced in total.

Is Mercedes an old man's car? However, Mercedes has tried eagerly to change its image of the “old people car”, a good example could be the update of its A-Class. Alongside more “aggressive” and vivid TV spots, accompanied by “aggressive” music, should attract younger customers.

What engine is in a Mercedes W202?

What does C mode mean in Mercedes? Comfort Mode It offers a smooth, relaxed driving experience with lighter steering, softer suspension, and smoother gear changes. Comfort mode prioritizes ride comfort over sportiness and is ideal for drivers who prioritize a comfortable ride over high-performance driving.

What is the rarest W202? The W202 Mercedes C55 AMG is one of the rarest vehicles to ever be produced by AMG, and it is believed that only 59 were produced in total.

What does W203 mean in Mercedes? The Mercedes-Benz C-Class (W203) is the internal designation for a range of compact executive cars manufactured and marketed by DaimlerChrysler from 1999 to 2010, as the second generation of the C-Class — in sedan/saloon, three-door hatchback coupé (marketed as the SportCoupé and sub-designated CL203) and station wagon ...

What engine is in a Mercedes W202?

The Big Eight Elements of Image Interpretation: A Comprehensive Guide

Image interpretation is a crucial skill in various fields, including remote sensing, cartography, and geology. To effectively analyze images, it's essential to understand the "Big Eight" elements of image interpretation. These elements provide a systematic approach for extracting meaningful information from images.

1. Image Tone: What is it and why does it matter?

Image tone refers to the brightness or darkness of an object in an image. It is influenced by factors such as illumination, surface roughness, and moisture content. Different tones can indicate different surface characteristics, such as water (dark), vegetation (bright), or urban areas (intermediate).

2. Image Texture: How does it help in interpretation?

Texture describes the spatial arrangement of tones within an image. It is quantified by measures such as coarseness, fineness, and uniformity. Different textures can reveal information about surface conditions, such as erosion, vegetation cover, or urbanization.

3. Image Pattern: What does it tell us about the scene?

Pattern refers to the repetitive arrangement of objects or features within an image. Identifying patterns can help determine the composition and structure of the scene. For example, linear patterns may indicate roads or rivers, while curvilinear patterns may suggest vegetation or mountains.

4. Image Shape: How does it contribute to object recognition?

Shape is a crucial element in recognizing objects in images. It can be described in terms of geometry, such as lines, curves, and polygons. Different shapes can often lead to the identification of specific features, such as buildings, vehicles, or water bodies.

5. Image Size: Why is it important to consider?

Image size refers to the physical dimensions of an object in an image. It is determined by the scale of the image and the resolution of the sensor. Accurate determination of object size can be useful for mapping, measuring distances, and

estimating heights.

6. Image Shadow: What does it reveal about topography?

Shadows in images can provide information about the topography of the scene. The length and direction of shadows are influenced by the sun's angle and the height of objects. Analyzing shadows can help determine elevation differences and identify potential topographic features.

7. Image Association: How does it help in spatial analysis?

Association refers to the relationship between objects or features in an image. By identifying spatial patterns and relationships, interpreters can infer connections and processes. For example, the presence of water bodies near vegetation may indicate agricultural areas, while clusters of high-rise buildings suggest urban centers.

8. Image Site: What information does it provide about the context?

Image site refers to the location and context of the image. This includes information such as the geographic coordinates, the date and time of acquisition, and the type of sensor used. Knowing the site can provide valuable insights into the environmental conditions and the purpose of the image acquisition.

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