

Banana DNA Extraction Lab

Objectives:

Describe where DNA is located in a plant cell.

Explain what procedures are required to release DNA from a plant cell

Observe the extraction of Genomic DNA from plant cells.

Name: _____

My Mark: _____/15

Teacher Mark: _____/15

Full of DNA

What can we tell about the molecular structure of DNA by studying the characteristics of DNA when we purify it from bananas?

Background: We will break open the cells of bananas and isolate the DNA from the rest of the cell debris. Bananas are a good source of DNA because some bananas are diploid (2 copies of each chromosome – 22 chromosomes in total) and others are even triploid banana (3 copies of each chromosome). You will never be able to eat a banana again without thinking of how much DNA is in it!



Introduction:

The process of isolating DNA from a cell is the first step of many laboratory procedures in biotechnology. The scientist must be able to separate the DNA from the unwanted substances of the cell gently enough so that the DNA is not broken up and sheared.

A “filtrate” is made of bananas and treated with a buffer containing salt (NaCl) and distilled water. . The salt solution acts as a buffer to maintain a constant pH and binds up the positive ions to prevent enzymes (DNAses) from chewing up the DNA. The salt shields the negative phosphates of the DNA which allows these ends to come closer so that they can precipitate out of a cold alcohol solution. A detergent is added which causes the cell membrane to break down by emulsifying the lipids and proteins which allows the cell membrane to break apart.

Dna Banana Extraction Lab Answers

**Dr Peter Neuenschwander, Dr Manuele
Tamò**



Dna Banana Extraction Lab Answers:

Current advancements in real-time plant pathogen diagnostics: From lab assays to in-field detection Ravinder Kumar, Milan Kumar Lal, Pramod Prasad, Rahul Kumar Tiwari, 2023-08-31 Endosymbionts N. Amaresan, Sapna Chandwani, 2025-09-30 This volume details techniques involved in the study of endosymbionts Chapters divided into four sections detail isolation maintenance of diverse endosymbionts classical microscopy staining PCR FISH flow cytometry next generation sequencing endosymbionts metabolites and bacterial endosymbionts in insects Step by step protocols are complemented by personal notes precautions and specifying the reagents to be used in each step to ensure the repeatability of the procedure across labs Authoritative and cutting edge Endosymbionts aims to empower researchers to expand the frontiers of endosymbiosis research and unlock new possibilities for science *Using Labs and Activities to Teach High School Genetics* Matthew Richard Withers, 2003 **Review for ...** Institouto Geōrgikōn Ereunōn (Cyprus), 1998 TEXT BOOK OF PHARMACOGNOSY AND PHYTOCHEMISTRY- I Dr. Vivekanand Katare, Dr. Rekha Tarasingh Rajput, Mr. Narendra Singh Solanki, Dr. Rakesh Sagar, Dr. Rajesh Kumar Sharma, 2025-06-19 Text Book of Pharmacognosy and Phytochemistry I is a comprehensive and foundational resource designed to provide pharmacy students with a thorough understanding of crude drugs of natural origin and their applications in modern medicine The book begins with an insightful introduction to Pharmacognosy covering its definition historical evolution scope and the various natural sources of drugs including plants animals marine organisms and tissue cultures It highlights the distinction between organized and unorganized crude drugs such as dried latex extracts gums and oleoresins The second chapter delves into the systematic classification of crude drugs based on alphabetical morphological chemical pharmacological and taxonomical criteria helping students navigate the diversity of natural substances The book then discusses adulteration its definition and examples stressing the importance of drug purity and quality control A significant section is devoted to the evaluation of crude drugs elaborating on organoleptic microscopic physical chemical and biological methods along with specialized techniques like quantitative microscopy using lycopodium spore methods and leaf constants The cultivation collection and processing of medicinal plants are also thoroughly covered including environmental and biological factors affecting growth the role of plant hormones polyploidy mutation hybridization and conservation strategies An important chapter is dedicated to plant tissue culture emphasizing its historical background types nutritional needs and significance in Pharmacognosy including its role in producing edible vaccines Further the book examines the role of Pharmacognosy across various medical systems such as Ayurveda Unani Siddha Homeopathy and Chinese medicine highlighting its relevance and integration in traditional and modern healthcare The text offers a detailed overview of secondary metabolites like alkaloids glycosides flavonoids tannins volatile oils and resins discussing their classification properties and identification tests Chapters on natural fibers hallucinogens teratogens and natural allergens expand the learner s scope It also addresses primary metabolites like

carbohydrates e g Acacia Honey proteins and enzymes e g gelatin casein papain and lipids e g castor oil wool fat beeswax explaining their chemistry preparation uses and pharmaceutical relevance Finally the book explores marine drugs offering insights into novel medicinal agents derived from oceanic sources **Applied Plant Virology** L. P. Awasthi,2020-05-14

Applied Plant Virology Advances Detection and Antiviral Strategies provides an overview on recent developments and applications in the field of plant virology The book begins with an introduction to important advances in plant virology but then covers topics including techniques for assay detection and the diagnosis of plant viruses the purification isolation and characterization of plant viruses the architecture of plant viruses the replication of plant viruses the physiology of virus infected hosts vectors of plant viruses and the nomenclature and classification of plants The book also discusses defense strategies by utilizing antiviral agents and management strategies of virus and viroid diseases With contributions from an international collection of experts this book presents a practical resource for plant virologists plant pathologists horticulturalists agronomists biotechnologists academics and researchers interested in up to date technologies and information that advance the field of plant virology Covers the detection control and management of plant viruses Discusses antiviral strategies along with mechanisms of systemic induced resistance to enhance the defense of plants against viruses Provides contributory chapters from expert plant virologists from different parts of the world *Indian Science Abstracts* ,1985-07 **Applied and Environmental Microbiology** ,2007 *Abstracts on Tropical Agriculture* ,1977 **Nucleic Acids Abstracts** ,1996 *Critical issues in plant health: 50 years of research in African agriculture* Dr Peter Neuenschwander,Dr Manuele Tamò,2019-02-08 Focuses on plant health issues in sub Saharan Africa which are key to improving yields Reviews ways of improving the health of key African crops such as cassava maize and grain legumes Brings together leading experts on plant health in sub Saharan Africa **Toxicology Research Projects Directory** ,1980-04

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