

Name \_\_\_\_\_

Date \_\_\_\_\_

### DNA Extraction Lab: Strawberry

**Background:** The long, thick fibers of DNA store the information for the functioning of the chemistry of life. DNA is present in every cell of plants and animals. Every cell in a strawberry contains eight copies of each of its chromosomes. As a result, strawberries contain large amounts of DNA. Strawberry DNA is easy to extract because strawberries are easy to mash, and ripe strawberries produce enzymes that contribute to the breakdown of cell walls. To extract the DNA, you will first break strawberry cells apart mechanically by crushing them. Next, you will add detergents to dissolve the cell's plasma membranes. A filtering step then removes cell organelles, broken cell walls, membrane fragments, and other cell debris. The result will be a red-colored solution containing DNA and other small dissolved molecules such as sugars and proteins. When cold isopropyl alcohol is layered on top of this solution, molecules of alcohol repel the DNA molecules and the DNA molecules clump together. A ropelike clump of many DNA molecules forms that is large enough to see with the unaided eye.

#### Pre-lab questions:

1. What do you think the DNA will look like?
2. Where is DNA found?
3. It is important that you understand the steps in the extraction procedure and why each step was necessary. Each step in the procedure aided in isolating the DNA from other cellular materials. Match the procedure with its function:

#### PROCEDURE

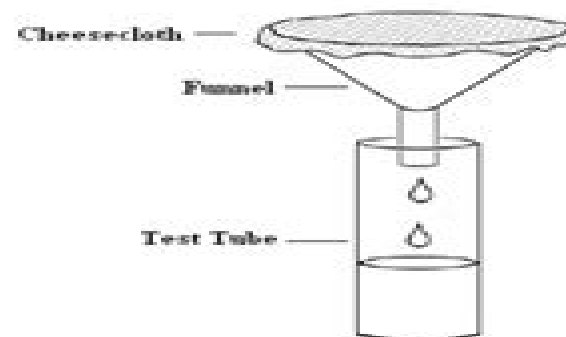
- A. Filter strawberry slurry through cheesecloth
- B. Mash strawberry with salty/soapy solution
- C. Initial smashing and grinding of strawberry
- D. Addition of ethanol to filtered extract

#### FUNCTION

- \_\_\_\_\_ To precipitate DNA from solution
- \_\_\_\_\_ Separate components of the cell
- \_\_\_\_\_ Break open the cells
- \_\_\_\_\_ Break up proteins and dissolve cell membranes

#### Materials:

Heavy duty Ziploc bag  
1 strawberry  
10 mL DNA extraction buffer (soapy, salty water)  
Cheesecloth  
Funnel  
50mL vial / test tube  
1 coffee stirrer  
20 mL ice cold isopropyl alcohol  
Watch glass  
Test tube rack



#### Procedure:

1. Remove the green sepals from the strawberry. Place one strawberry in a Ziploc bag and seal the bag shut.
2. Smash/grind up the strawberry using your fist and fingers for 2 minutes. *Careful not to break the bag!*
3. Add the provided 10mL of extraction buffer (salt and soap solution) to the bag.
4. Knead/mush the strawberry in the bag again for 1 minute – *try not to make a lot of soap bubbles!*
5. Assemble your filtration apparatus as shown above/right.

# Dna Extraction Lab Answer Key

**M Tight**



## **Dna Extraction Lab Answer Key:**

**Molecular Microbiology Laboratory** Walt Ream, Bruce Geller, Katherine Field, 2012-08-31 Intends to teach principles and techniques of molecular biology and microbial ecology to upper level undergraduates majoring in the life sciences and to develop students scientific writing skills This title exposes students to the molecular based techniques It provides faculty with an accessible resource for teaching protocols WorldCat *Introduction to Biology* National Agricultural Institute, 2014-08-27 Introduction to Biology is one in a series of Just The Facts JTF textbooks created by the National Agricultural Institute for secondary and postsecondary programs in biology agriculture food and natural resources AFNR This is a bold new approach to textbooks The textbook presents the essential knowledge of introductory biology in outline format This essential knowledge is supported by a main concept learning objectives and key terms at the beginning of each section references and a short assessment at the end of each section Content of the book is further enhanced for student learning by connecting with complementary PowerPoint presentations and websites through QR codes scanned by smart phones or tablets or URLs The textbook is available in print and electronic formats To purchase electronic copies inquire at [info.national.ag.institute.org](mailto:info.national.ag.institute.org)

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Bryan Jennings,2016-12-12 Phylogenomics is a rapidly growing field of study concerned with using genome wide data usually in the form of DNA sequence loci to infer the evolution of genes genomes and the Tree of Life Accordingly this discipline connects many areas in biology including molecular and genomic evolution systems biology molecular systematics phylogeography conservation genetics DNA barcoding and others With the advent of Next Generation Sequencing in addition to advances in computer hardware and software over the past decade researchers can now generate unparalleled phylogenomic datasets that are helping to illuminate many areas in the life sciences This book is an introduction to the principles and practices of gathering these data Phylogenomic Data Acquisition Principles and Practice is intended for a broad cross section of biologists and anyone else interested in learning how to obtain phylogenomic data using the latest methods

**Introduction to Molecular Biological Techniques** Lawrence Jack Bradshaw,1966      Criminology, Penology and Police Science Abstracts ,1994      *The Use of Food in Chemistry Experiments to Engage and Enrich the Teaching in the Classroom* Brian Michael Topping,2010

**Computer Evolution of Gene Circuits for Cell-embedded Computation, Biotechnology and as a Model for Evolutionary Computation** Tommaso F. Bersano-Begey,2003      *The O.J. Simpson Murder Trial* ,1996      *Formative Report on the Extraction of Strawberry DNA* Clarissa Rasshleen,2023-03-28

Forschungsarbeit aus dem Jahr 2021 im Fachbereich Biologie Genetik Gentechnologie Sprache Deutsch Abstract This is a formative report The aim is to investigate the strawberry DNA by extracting it using isopropyl alcohol and a DNA extraction solution to learn more about the DNA      **Biology-- a Human Approach** Biological Sciences Curriculum Study,1997

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Linda E. Graham, James M. Graham, Lee Warren Wilcox, 2003 This book focuses readers on the function of plants and the role they play in our world The authors emphasize the scientific method to help readers develop the critical thinking skills they need to make sound decisions throughout life This focus on how plants work and the development of critical thinking skills together support the ultimate goal of developing scientific literacy This book is organized around the themes of DNA science global ecology and evolution The key concepts discussed in the book are molecules cells and microbes plant structure and reproduction and plant diversity and the environment For anyone interested in botany plant biology      **Proceedings** ,1999

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