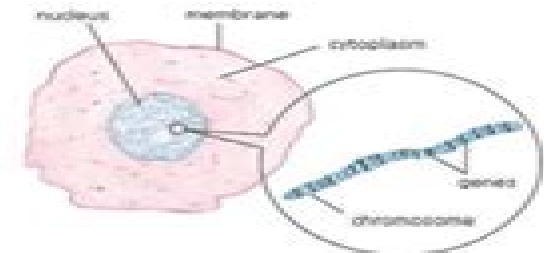


# Lab method for extracting DNA from human CHEEK CELLS

## See Your DNA = Crack the Code of Life

### Materials

- Light colored Gatorade = 10 ml
- Liquid detergent = 1 ml
- Ethyl Alcohol (COLD) = 5 ml (Put on ICE)
- 1 plastic cup
- 1 - 50 ml beakers
- 1 - Graduated cylinder - small
- Glass stirring rod or wooden stick for stirring mixture
- Eye dropper or paper towel – may be needed to remove foam
- Paper clip hook for collecting DNA



1. Pour 10 milliliters of Gatorade into a plastic cup. Take the 10 ml Gatorade and **vigorously** swish it in your mouth, making sure to rub your tongue along your cheeks and chew on your cheek (use your teeth, but **NO BLOOD**) for 30 seconds. This amount of swishing will actually become quite laborious—hang in there! Just remember: "spit happens".
2. **CAREFULLY** spit Gatorade back into cup; then pour 10 ml of spit into clean 50 ml beaker.
3. Add 1 milliliter (15 – 18 drops) of liquid detergent to the beaker.
4. Using stirring rod **gently** mix the contents for 5 minutes. **DO NOT MAKE FOAM**. Use paper towel to remove foam that might be made. *(The detergent will break open the cell membrane to release the DNA into the soapy solution. Do not be too vigorous while mixing! DNA is a very long molecule. Physical abuse can break it into smaller fragments, a process known as shearing.)*
5. Slightly tilt beaker and pour 5 ml fluid ounces of the chilled ethyl alcohol **SLOWLY** down the side of the beaker so that it forms a layer on the top of your soapy solution. **DO NOT TIP, SHAKE, OR MIX THE BEAKER** or you may not see the DNA. *Put beaker down on table and then "get down" and look.*
6. Wait for about 5 minutes and watch as the DNA floats to the surface. If you look to the line of separation between the two layers, or the interface, you will start to see bubbles attached with tiny hair like white strings. These strings are your DNA
7. Use the glass rod or wooden stick to remove DNA from beaker by twirling the rod or stick in a circular motion. Be careful to minimize mixing of alcohol and soapy layers. If too much shearing has occurred, the DNA fragments may be too short to wind up, and they may form clumps instead. Place on paper towel and dry DNA **OR**
8. If time permits, place small sample of DNA on slide; look at it with microscope.



**Be sure to share results with all lab partners!!!**

**TEACHER SIGNATURE: CLEAN UP!!!!**

# Dna Extraction Lab Cheek Cells Analysis Questions

**Susanne Hummel**



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*Molecular and Quantitative Animal Genetics* Hasan Khatib, 2015-03-02 Animal genetics is a foundational discipline in the fields of animal science animal breeding and veterinary sciences While genetics underpins the healthy development and breeding of all living organisms this is especially true in domestic animals specifically with respect to breeding for key traits *Molecular and Quantitative Animal Genetics* is a new textbook that takes an innovative approach looking at both quantitative and molecular breeding approaches The book provides a comprehensive introduction to genetic principles and their applications in animal breeding This text provides a useful overview for those new to the field of animal genetics and breeding covering a diverse array of topics ranging from population and quantitative genetics to epigenetics and biotechnology *Molecular and Quantitative Animal Genetics* will be an important and invaluable educational resource for undergraduate and graduate students and animal agriculture professionals Divided into six sections pairing fundamental principles with useful applications the book's comprehensive coverage will make it an ideal fit for students studying animal breeding and genetics at any level *Carolina Science and Math* Carolina Biological Supply Company, 2003

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*Pathology of the Head and Neck* Antonio Cardesa, Pieter J. Slootweg, Nina Gale, Alessandro Franchi, 2017-02-08 This book provides a comprehensive description of the pathology of the head and neck region concentrating especially on those pathologic entities that are unique to or characteristic of the head and neck The new edition retains the ten chapters of the first edition all updated and improved and additionally contains seven entirely new chapters and a more detailed subject index The number of illustrations has been substantially increased and various lesions absent in the original edition have been included Throughout attention is paid to correlation of pathology with epidemiology clinical features pathogenesis and

molecular genetics Differential diagnosis is addressed and information is also provided on staging prognosis and therapy The authors include foremost experts in the field some of whom are senior members of the Working Group on Head and Neck Pathology of the European Society of Pathology *Gene and Environment Interactions in Neurodevelopmental Disorders* Lorenzo More,Carmem Gottfried,Patricia Pelufo Silveira,2022-04-25 B.A.S.I.C. ,1969 Bibliography of Agriculture with Subject Index ,1995 *Index to Scientific Reviews* ,1974\* Semiannual An international interdisciplinary index to the review literature of science medicine agriculture technology and the behavioral sciences Includes literature appearing in about 75 full coverage source journals articles with 40 or more references and marked review references in Science citation index data base SCI format with citation source permuterm corporate patent and anonymous indexes also journal lists

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**Ancient DNA Typing** Susanne Hummel,2013-03-09 This is the definitive source of information on techniques for the identification and sequencing of old DNA pieces and their use in biological and medical research and application Application of aDNA techniques are useful tools for investigations reaching from evolutionary studies to law enforcement approaches What brings them together is the interest in specific methods of handling aDNA i e elaborated PCR and sequencing techniques and the interpretation of the results This books serves as an ideal guideline for it demonstrates how problem solving strategies can be applied in various areas Forensic DNA Biology Kelly M. Elkins,2013 DNA typing has revolutionized criminal investigations and has become a powerful tool in the identification of individuals in criminal and paternity cases Forensic DNA Biology A Laboratory Manual is comprised of up to date and practical experiments and step by step instructions on how to perform DNA analysis including pipetting microscopy and hair analysis presumptive testing of body fluids and human DNA typing Modern DNA typing techniques are provided reflecting real life where not all institutions and crime labs can afford the same equipment and software Real case studies will be used throughout and the author will provide an Instructor Manual and PowerPoint lecture slides Provides practical step by step instruction on how to perform forensic DNA analysis Includes analysis of hair presumptive testing of body fluids human DNA typing and statistics Covers techniques such as pipetting microscopy and DNA extraction Pre and post lab exercises and questions assist the reader in learning the material Report writing templates assure the reader learns real world crime lab procedure

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### **Table of Contents Dna Extraction Lab Cheek Cells Analysis Questions**

1. Understanding the eBook Dna Extraction Lab Cheek Cells Analysis Questions
  - The Rise of Digital Reading Dna Extraction Lab Cheek Cells Analysis Questions
  - Advantages of eBooks Over Traditional Books
2. Identifying Dna Extraction Lab Cheek Cells Analysis Questions
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Dna Extraction Lab Cheek Cells Analysis Questions
  - User-Friendly Interface
4. Exploring eBook Recommendations from Dna Extraction Lab Cheek Cells Analysis Questions
  - Personalized Recommendations

- Dna Extraction Lab Cheek Cells Analysis Questions User Reviews and Ratings
- Dna Extraction Lab Cheek Cells Analysis Questions and Bestseller Lists
- 5. Accessing Dna Extraction Lab Cheek Cells Analysis Questions Free and Paid eBooks
  - Dna Extraction Lab Cheek Cells Analysis Questions Public Domain eBooks
  - Dna Extraction Lab Cheek Cells Analysis Questions eBook Subscription Services
  - Dna Extraction Lab Cheek Cells Analysis Questions Budget-Friendly Options
- 6. Navigating Dna Extraction Lab Cheek Cells Analysis Questions eBook Formats
  - ePub, PDF, MOBI, and More
  - Dna Extraction Lab Cheek Cells Analysis Questions Compatibility with Devices
  - Dna Extraction Lab Cheek Cells Analysis Questions Enhanced eBook Features
- 7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Dna Extraction Lab Cheek Cells Analysis Questions
  - Highlighting and Note-Taking Dna Extraction Lab Cheek Cells Analysis Questions
  - Interactive Elements Dna Extraction Lab Cheek Cells Analysis Questions
- 8. Staying Engaged with Dna Extraction Lab Cheek Cells Analysis Questions
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Dna Extraction Lab Cheek Cells Analysis Questions
- 9. Balancing eBooks and Physical Books Dna Extraction Lab Cheek Cells Analysis Questions
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Dna Extraction Lab Cheek Cells Analysis Questions
- 10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
- 11. Cultivating a Reading Routine Dna Extraction Lab Cheek Cells Analysis Questions
  - Setting Reading Goals Dna Extraction Lab Cheek Cells Analysis Questions
  - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Dna Extraction Lab Cheek Cells Analysis Questions
  - Fact-Checking eBook Content of Dna Extraction Lab Cheek Cells Analysis Questions

- Distinguishing Credible Sources
- 13. Promoting Lifelong Learning
  - Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
- 14. Embracing eBook Trends
  - Integration of Multimedia Elements
  - Interactive and Gamified eBooks

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**5 flame tests and atomic spectra experiment chemistry** - Sep 23 2022

web objectives to perform flame tests of metal cations in order to observe their featured colors to perform calculations up determine the frequency and energy in the emitted photons to tell these results the the types of electronic transitions occurring in are default

**14a atomic emission spectra experiment chemistry libretexts** - Oct 05 2023

web atomic emission spectra electrons in atoms normally occupy the lowest energy states possible such an atom is said to be in the ground state however electrons can be excited to high energy states when they absorb excess energy the excess energy can be provided by heat light or electrical discharge

atomic spectra experiment university of alabama - Jun 01 2023

web atomic spectra experiment introduction in this experiment you will observe the spectra lines emitted by hydrogen gas and mercury gas contained in spectral tubes equipment optical bench meter stick diffraction grating lamp power supply hydrogen and mercury spectral tubes theory

**atomic spectra experiment cyberlab sutd edu sg** - Oct 25 2022

web specialists on hydrogen and hydrogen like systems presents the advances in theory and experiment that have occurred since that time behavior of electrons in atoms nov 30 2022 atomic spectra the interactions between atoms and electrons quantum theory of atomic structure

*lab 7 atomic spectra chemistry lab notes chem 1411 studocu* - May 20 2022

web lab 7 atomic spectra chemistry lab notes general chemistry i chem 1411 students shared 265 documents in this course more info the purpose of the lab was to determine the characteristics of visible light that was emitted by different elements w e did this by conducting a flame test the purpose was

*atomic spectra rutgers university* - Jul 22 2022

web fingerprints of the elements atomic spectra as dr matilsky discussed in his video lecture atomic spectra occur due to the fact that orbital radii of electrons and hence their energies are quantized at specific levels determined by the atomic number number of protons and ionization state number of electrons in any given element

**atomic spectra a physical chemistry experiment journal of** - Feb 26 2023

web in this experiment the student measures the features of a simple spectrum that of sodium an empirical relation is deduced for the frequencies of the lines and the position of unobserved lines is predicted