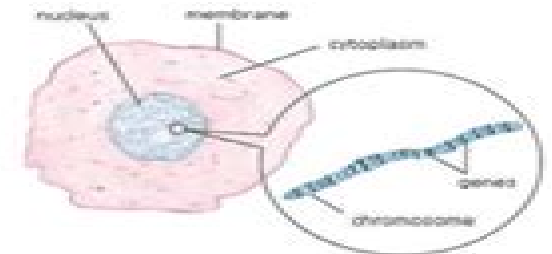


# Lab method for extracting DNA from human CHEEK CELLS

## 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

**Alan Booth, Ann C. Cruter**



## **Dna Extraction Lab Cheek Cells Analysis Questions:**

*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

**Conference Proceedings. New Perspectives in Science Education** Pixel,2015 *Forensic Anthropology Training Manual* Karen Ramey Burns,2015-09-07 Provides basic information on successfully collecting processing analyzing and describing skeletal human remains *Forensic Anthropology Training Manual* serves as a practical reference tool and a framework for training in forensic anthropology The first chapter informs judges attorneys law enforcement personnel and international workers of the information and services available from a professional forensic anthropologist The first section Chapters 2 11 is a training guide to assist in the study of human skeletal anatomy The second section Chapters 12 17 focuses on the specific work of the forensic anthropologist beginning with an introduction to the forensic sciences Learning Goals Upon completing this book readers will be able to Have a strong foundation in human skeletal anatomy Explain how this knowledge contributes to the physical description and personal identification of human remains Understand the basics of excavating a grave preparing a forensic report and presenting expert witness testimony in a court of law Define forensic anthropology within the broader context of the forensic sciences Describe the work of today's forensic anthropologists **Disparities in School Readiness** Alan Booth,Ann C. Crouter,2008 First Published in 2007 Routledge is an imprint of Taylor Francis an informa company

*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

*Bibliography of Agriculture* ,1992-06 **Science Citation Index** ,1995 Vols for 1964 have guides and journal lists

**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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