

Identifying DNA as the Genetic Material

Biology – Chapter 8/Lesson 1

By Bilal Khalid

Main Idea:

Griffith finds a “transforming principle”.

Griffith was investigating two forms of the bacterium that causes pneumonia. The **S form (smooth)** is surrounded by a coating made of carbohydrates. The **R form (rough)** of bacteria does not have a smooth coating. Only the S type killed mice. When the S type was heated, the mice were unaffected.

He then injected mice with killed S bacteria and live R bacteria, and the mice died. He found live S bacteria from blood samples from the dead mice. He concluded that some material was transferred from the killed-S bacteria to the R bacteria. He called this material the **transforming principle**.

Live S Bacteria	Live R Bacteria	Heat-killed S Bacteria	Heat-killed S and Live R bacteria
Surrounded by a carbohydrate coat, looks smooth	Not Surrounded by a carbohydrate coat, looks rough	N/A	N/A
Mice died	Mice lived	Mice lived	Mice died, dead S + living R = living S

Main Idea:

Avery identifies DNA as the transforming principle.

Avery's team began by combining living R bacteria with an extract made from S bacteria. They then performed a series of tests to find out if the transforming principle was DNA or protein.

- **Qualitative Tests** Chemical tests showed that *protein was not present, but DNA was present.*
- **Chemical Analysis** The *elements in the extract closely matched those found in DNA.*
- **Enzyme Tests** Three enzymes were added to the extract: protein-breaking enzymes, RNA-breaking enzymes, and DNA-breaking enzymes. *When the protein and RNA were broken down, transformation still occurred, while it stopped when DNA was broken down.*

Main Idea:

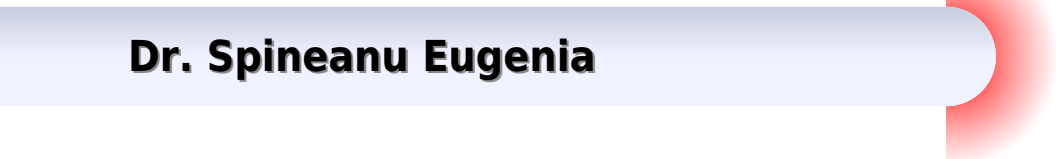
Hershey and Chase confirm that DNA is the genetic material.

Hershey and Chase were studying viruses that infect bacteria. This type of virus, called a **bacteriophage** (or phage), takes over a bacterium's genetic machinery and directs it to make more viruses. Bacteriophages are made of a DNA molecule surrounded by a protein coat – the perfect structure for the experiment.

Protein contains sulfur but very little phosphorus, while DNA contains phosphorus but no sulfur. They grew phages in cultures that contained radioactive isotopes of sulfur or phosphorus. Then they made two experiments:

Guide Identifying Genetic Material

Dr. Spineanu Eugenia



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Handbook of Health Social Work Sarah Gehlert, Teri Browne, 2019-07-09 The updated third edition of the definitive text on health social work Thoroughly revised and updated the third edition of Handbook of Health Social Work is an authoritative text that offers a comprehensive review of the diverse field of health social work With contributions from a panel of international experts in the field the book is theory driven and solidly grounded in evidence based practice The contributors explore both the foundation of social work practice and offer guidance on effective strategies policies and program development The text provides information that is essential to the operations of social workers in health care including the conceptual underpinnings and the development of the profession The authors explore the practice issues such as theories of health behavior assessment communication and the intersections between health and mental health The authors also examine a wide range of examples of social work practices including settings that involve older adults nephrology oncology and chronic diseases such as diabetes heart disease HIV AIDS genetics end of life care pain management and palliative care as well as alternative treatments and traditional healers This is the only handbook of its kind to unite the body of health social work and Offers a wellness rather than psychopathological perspective and contains treatment models that are evidence based Includes learning exercises further resources research suggestions and life course information Contains new chapters on topics such as international health insurance and payment systems and implementation of evidence based practice Presents information on emerging topics such as health policy in an age of reform and genomics and the social environment Reviews new trends in social work and health care including genetics trans disciplinary care and international national and state changes in policy Written for social work educators administrators students and practitioners the revised third edition of Handbook of Health Social Work offers in one volume the entire body of health social work knowledge

Guide to Biometrics Ruud M. Bolle, Jonathan H. Connell, Sharath Pankanti, Nalini K. Ratha, Andrew W. Senior, 2013-06-29 Starting with fingerprints more than a hundred years ago there has been ongoing research in biometrics Within the last forty years face and speaker recognition have emerged as research topics However as recently as a decade ago biometrics itself did not exist as an independent field Each of the biometric related topics grew out of different disciplines For example the study of fingerprints came from forensics and pattern recognition speaker recognition evolved from signal processing the beginnings of face recognition were in computer vision and privacy concerns arose from the public policy arena One of the challenges of any new field is to state what the core ideas are that define the field in order to provide a research agenda for the field and identify key research problems Biometrics has been grappling with this challenge since the late 1990s With the maturation of biometrics the separate biometrics areas are coalescing into the new discipline of biometrics The establishment of biometrics as a recognized field of inquiry allows the research community to identify problems that are common to biometrics in general It is this identification of common problems that

will define biometrics as a field and allow for broad advancement Guidelines for the Release Into the Environment of Genetically Modified Organisms International Office of Epizootics, 1991 Mandated Benefits Compliance Guide 2016 W/ Cd

The Balser Group, 2016-01-04 Mandated Benefits 2016 Compliance Guide is a comprehensive and practical reference manual covering key federal regulatory issues that must be addressed by human resources managers benefits specialists and company executives in all industries This comprehensive and practical guide clearly and concisely describes the essential requirements and administrative processes necessary to comply with all benefits related regulations It covers key federal regulatory issues that must be addressed by human resources managers benefits specialists and company executives across all industries Mandated Benefits 2016 Compliance Guide includes in depth coverage of these and other major federal regulations Patient Protection and Affordable Care Act PPACA Health Information Technology for Economic and Clinical Health HITECH Act Mental Health Parity and Addiction Equity Act MHPAEA Genetic Information Nondiscrimination Act GINA Americans with Disabilities Act ADA Employee Retirement Income Security Act ERISA Health Insurance Portability and Accountability Act HIPAA Heroes Earnings Assistance and Relief Tax Act HEART Act Consolidated Omnibus Budget Reconciliation Act COBRA Mandated Benefits 2016 Compliance Guide helps take the guesswork out of managing employee benefits and human resources by clearly and concisely describing the essential requirements and administrative processes necessary to comply with each regulation It offers suggestions for protecting employers against the most common litigation threats and recommendations for handling various types of employee problems Throughout the Guide are numerous exhibits useful checklists and forms and do s and don ts A list of HR audit questions at the beginning of each chapter serves as an aid in evaluating your company s level of regulatory compliance Mandated Benefits 2016 Compliance Guide has been updated to include The latest trends in successful Ethics and Compliance Programs Information on the Department of Labor DOL proposed changes to the FLSA white collar exemptions The latest DOL guidelines on the determination of independent contractor status The new regulations and guidelines for health care reform as mandated by the Patient Protection and Affordable Care Act PPACA specifically updates and new information on Summary of Benefits and Coverage SBC limits on cost sharing the employer shared responsibility pay or play requirements information reporting Forms 1094 and 1095 SHOP the small group market of the health care marketplace and the so called Cadillac Tax the 40 percent excise tax on high cost health plans The major revisions to excepted benefits under the Health Insurance Portability and Accountability Act HIPAA including limited wraparound benefits EAPs non coordinated excepted benefits and supplemental excepted benefits The reinstated Trade Adjustment Assistance TAA Information on the proposed definition of fiduciary and the Supreme Court s first ever ruling on fiduciary standards Expanded information about joint employer relationships An expanded section describing the employment application process information about the status of the Deferred Action for Parents of Americans and Lawful Permanent Residents DAPA and proposed changes to E Verify New material on proposed sex discrimination

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Manual on the development and use of FAO and WHO specifications for microbial pesticides World Health Organization, Food and Agriculture Organization of the United Nations, 2024-04-26

Artificial Intelligence-Based System Models in Healthcare A. Jose Anand, K. Kalaiselvi, Jyotir Moy Chatterjee, 2024-10-29 Artificial Intelligence Based System Models in Healthcare provides a comprehensive and insightful guide to the transformative applications of AI in the healthcare system This book is a groundbreaking exploration of the synergies between artificial intelligence and healthcare innovation In an era where technological advancements are reshaping the landscape of medical practices this book provides a comprehensive and insightful guide to the transformative applications of AI in healthcare systems From conceptual foundations to practical implementations the book serves as a roadmap for understanding the intricate relationships between AI based system models and the evolution of healthcare delivery The first section delves into the fundamental role of technology in reshaping the healthcare landscape With a focus on daily life activities decision support systems vision based management and semantic frameworks this section lays the groundwork for understanding the pivotal

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A Commodity Systems Assessment Methodology for Problem and Project Identification Jerry La Gra,1990 *Study Guide and Procedure Checklist Manual*

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Buckley,2018-12-26 State by State Guide to Human Resources Law is the most comprehensive authoritative guide to the employment laws of the 50 states and the District of Columbia It is designed to provide quick access to each state s laws on the expanding number of issues and concerns facing business executives and their advisors the professionals in HR compensation and employee benefits who work in multijurisdictional environments This 1 guide to HR law in every state will help you to Find accurate answers fast with our easy to use format and full citation to authority Compare and contrast employment laws between states Ensure full regulatory compliance and avoid legal entanglements Get instant access to clear coverage of key topics including state health care reform initiatives FMLA same sex unions workers comp and much more And much more State by State Guide to Human Resources Law 2018 Edition has been updated to include In depth coverage of the Supreme Court s recent same sex marriage decision and its implications for employment law Discussion of three important Title VII cases involving pregnancy discrimination religious discrimination and the EEOC s statutory conciliation obligation Analysis of private sector employment discrimination charges filed with the EEOC during FY 2014 including charge statistics with a breakdown by type of discrimination alleged Coverage of recent state and federal legislative efforts to prohibit employers from requiring employees and job applicants to disclose their passwords to social media and private e mail accounts as a condition of employment Discussion of the Supreme Court s recent PPACA decision and its effect on the federal and state health insurance exchanges Update on the Domestic Workers Bill of Rights now enacted in six states Coverage of the growing trend to raise state minimum wage rates and to increase penalties for violations of wage and hour laws Update on workplace violence prevention efforts and related issues Coverage of state laws requiring employers to provide pregnant workers with reasonable accommodations including longer or more frequent rest periods And much more Previous Edition State by State Guide to Human Resources Law 2018 Edition ISBN 9781454883722 The Sustainable

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