Lab - Transformation of *E. coli* Bacteria with the pGLO plasmid

I. INTRODUCTION:

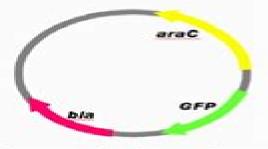
Green Fluorescent Protein is used extensively in biology research and work. It is one among several fluorescent proteins that allow DNA to be sequenced automatically by lasers. It is used quite frequently to label cells for studying how organisms develop as embryos and it is a key part of ongoing stem cell research. The protein itself does not glow but it can be made to fluoresce with a green light when exposed to ultraviolet (UV) light.

Bacteria grow well with the food source Luria Broth (LB). You can grow them either in liquid LB or on the surface of a petri dish with a mixture of LB and agar that solidifies into a thick gel. Antibiotics are sometimes also added to the agar to help control the growth of bacteria that are unwanted at the end of the experiment. Most antibiotics either kill the bacteria or keep them from reproducing. We will be using an antibiotic called ampicillin (amp).

Lab groups will prepare bacterial cells using calcium chloride to help the small plasmid circles of DNA get through the membrane of the cell. Then, you will get a plasmid into half of these cells by weakening the membrane

further with heat shocks (cold, hot cold). A small percentage of the millions of bacteria in your sample should successfully take in plasmids.

Each plasmid contains a gene coding for green fluorescent protein (GFP), a gene coding for an enzyme (beta-lactamase) that breaks down the antibiotic ampicillin and a region that is like a lock or on/off switch for the green fluorescent protein gene. The on/off switch or lock is called an "inducible operion" that is usually in the "off" or locked



position. The sugar arabinose (ara) is the key that opens the lock and turns on the GFP region of the plasmid.

You will put your transformation mixes (and your control sample) onto petri dishes to compare what happens with ones that have the plasmid to ones that have not received the plasmid. After the bacteria have had a chance to grow we will look at them under normal and ultraviolet light. It will take at least a day to show results.

Pre-lab Questions

- 1. What is a plasmid?
- 2. What is a gene?
- 3. What is luria broth (LB)?

Wards Transformation Of E Coli Lab Answers

RJ Shavelson

Wards Transformation Of E Coli Lab Answers:

Biology .1999 Biotechnology Holt Rinehart & Winston, Holt, Rinehart and Winston Staff, 1998 Annual Report, Intramural Activities National Cancer Institute (U.S.). Division of Cancer Etiology, 1987 **Lectures Held at the 8th** DECHEMA Annual Meeting of Biotechnologists, May 28-30, 1990, Frankfurt Am Main, F.R.G.: Biochemical methods for water analysis (GDCh-Workshop), Presentation of cell culture technology laboratories, Microbial principles in bioprocesses applied genetics, Microbial material deterioration, Environmental biotechnology Dieter Behrens.Peter Krämer.1990 Cumulated Index Medicus ,1968 ICRDB Cancergram, 1986 Nuclear Science History of United States Army Base Hospital No. 20 United States. Army. Base Hospital no. 20, Abstracts ,1973 Philadelphia, 1920 Nucleic Acids Abstracts ,1996 Abridged Index Medicus, 1986 **Microbiology Abstracts** Oral and Maxillofacial Infections Richard G. Topazian, Morton H. Goldberg, 1987 ,1991 Genetics Abstracts ,1995 Biochemistry Abstracts, 1984 EPA Publications Bibliography, 1984-1990: Report summaries ,1990 Publication ,1966 Cambridge Scientific Biochemistry Abstracts ,1992 **Wastewater Reclamation at** Whittier Narrows California. State Water Quality Control Board, 1966 **Scandinavian Journal of Infectious Diseases** .1971 Drug and Allied Industries, 1959

Unveiling the Magic of Words: A Review of "Wards Transformation Of E Coli Lab Answers"

In a world defined by information and interconnectivity, the enchanting power of words has acquired unparalleled significance. Their capability to kindle emotions, provoke contemplation, and ignite transformative change is truly aweinspiring. Enter the realm of "Wards Transformation Of E Coli Lab Answers," a mesmerizing literary masterpiece penned by way of a distinguished author, guiding readers on a profound journey to unravel the secrets and potential hidden within every word. In this critique, we shall delve in to the book is central themes, examine its distinctive writing style, and assess its profound affect the souls of its readers.

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Wards Transformation Of E Coli Lab Answers Introduction

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