EXPLORING TRANSFORMATION WITH STEAM

Related Products

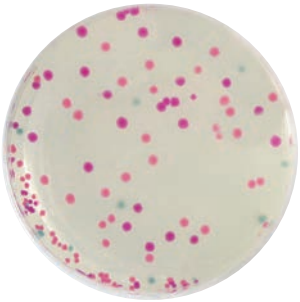
Rainbow Transformation

Transformation is of central importance in molecular cloning since it allows for the selection, propagation, expression and purification of a gene. Positive selection for cells containing plasmid DNA is accomplished by antibiotic growth selection. In this experiment, your students will transform bacteria with a new set of rainbow color plasmids that transform non-pathogenic bacterial cells into bright, colorful cells.

For 10 Lab Groups

Set Up & Plating 50 min.
Incubation overnight
Transformation efficiency 15 min.

Cat. #224



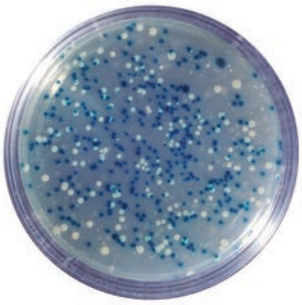
Blue/White Cloning of a DNA Fragment & Assay of ß-galactosidase

When DNA is subcloned in the pUC polylinker region, ß-galactosidase production is interrupted, resulting in the inability of cells to hydrolyze X-Gal. This results in the production of white colonies amongst a background of blue colonies. This experiment provides a DNA fragment, linearized plasmid, and T4 DNA Ligase. Following the ligation to synthesize the recombinant plasmid, competent E.coli cells are transformed and the number of recombinant antibiotic resistant white and blue colonies are counted. ß-galactosidase activity is assayed from blue and white bacterial cells. This experiment can be broken down into three modules: ligation, transformation, and assay of ß-galactosidase.

For 5 Lab Groups

Module I: Ligation - 70 min.
Module II: Transformation and Selection - 60 min.
Module III: Assay of ß-galactosidase - 60 min.

Cat. #300



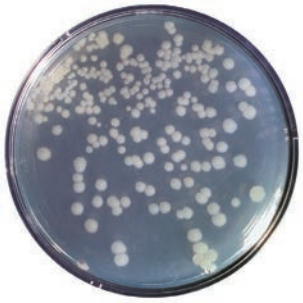
Construction & Cloning of a DNA Recombinant

Cloning is frequently performed to study gene structure, function, and to enhance gene expression. This experiment is divided into five modules. Clones are constructed by ligation of a vector and a fragment insert. The constructs are then transformed into competent cells and the cells are grown and selected for resistance. Plasmid DNA is then isolated from the transformants, cleaved with restriction enzymes, and analyzed by agarose gel electrophoresis. Recommended for college level courses.

For 5 Plasmid Constructs & Analyses

Module I: 70 min.
Module II: 70 min.
Module III: 15 min.
Module IV: 65-80 min.
Module V: 70 min.
Electrophoresis 45 min.

Cat. #301



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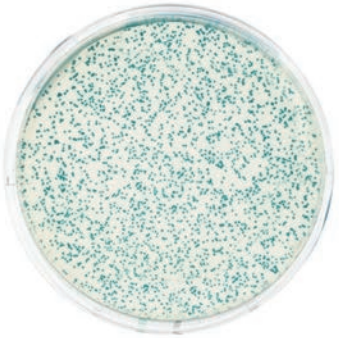
Related Products

Transformation of E.coli with pGAL™ (Blue Colony)

In this experiment, your students can see a blue color change in transformed cells due to the switching on of a gene. The pGAL™ plasmid gives them a blue color due to the production of the ß-galactosidase protein by the lacZ gene. IPTG is not required in this experiment since pGAL™ contains the complete lacZ gene.

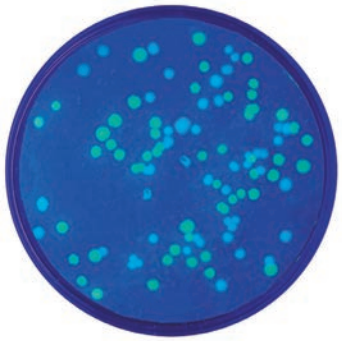
- For 10 Lab Groups
- Complete in 50 min. and grow overnight
- **Cat. #221**



Transformation of E.coli with Blue and Green Fluorescent Proteins

Green Fluorescent Protein (GFP), which is responsible for bioluminescence in the jellyfish Aequorea victoria, is used extensively in all areas of science. Many organisms have been transformed with the GFP gene. It has proven to be so useful that scientists have mutated it to produce Blue Fluorescent Protein (BFP). In this simple experiment, your students will transform bacteria either with GFP, BFP or both!

- For 10 Lab Groups
- Complete in 50 min. and grow overnight
- **Cat. #222**



Transformation of E.coli with Green Fluorescent Proteins (GFP)

Transformed cells take up a plasmid containing the GFP gene. The GFP gene was isolated from the jellyfish Aequorea victoria. Transformed colonies expressing the GFP protein are visibly green in normal light but will fluoresce brightly when exposed to long wave UV light.

- For 10 Lab Groups
- Set Up & Plating 50 min.
  Incubation overnight
  Transformation efficiency 15 min.
- **Cat. #223**

EXPLORING TRANSFORMATION WITH STEAM

Related Products

EDVOTEK® 1.8 L Digital Waterbath

1.8 L Waterbath
5.5 x 6 x 4" chamber
Includes one cover
Cat. #539

BEST SELLER

This classic Edvotek® waterbath has been improved to now include digital temperature control! We've also added a low-water sensor to prevent burn-outs and deepened the chamber to hold more bottles and flasks. The stainless steel chamber is corrosion resistant and temperature controlled from ambient to 99°C with cover (now included).

EDVOTEK® 10 L Digital Waterbath

10 L Waterbath
12 x 9.5 x 6" chamber
Includes one cover
Cat. #538

The Edvotek® 10 L waterbath incorporates digital temperature control and an optional shaking capability! Features a low-water sensor to prevent burn-outs and the deep chamber holds virtually any bottle or flask. The stainless steel chamber is corrosion resistant and temperature controlled from ambient to 99°C with cover (now included).

Incubation Oven

This economical bacterial incubator features a digital temperature control with a range from Ambient +1° C to 60° C. Ideal for growing bacteria on agar plates at 37° C or for Southern and Western Blot analysis at 60° C. Includes two adjustable/removable shelves for increased capacity. Accepts bottles and flasks up to 2 L.
Internal dimensions are: 10.3 x 9.3 x 12.8".
External dimensions are: 13.2 x 14.5 x 18.7".

Cat. #546

Fixed Volume MiniPipets™

Robust, accurate, easy to use, color coded, fun & cost effective micropipets which use standard micropipet tips. No need to calibrate and impossible to measure the wrong volume!

Cat. # 588 40 µl MiniPipet

BEST SELLER

Uses Standard 1-200 µl tips.

EDVOTEK® Variable Micropipets

Our newly designed Variable Micropipets feature volumes ranging from 0.1 to 5000 µl. They are easy to use, sturdy, highly accurate and use standard micropipet tips. The volume is easily selected by twisting the top. The lightweight design and tip ejector makes operation fast & easy. A tool and instructions are included for self-calibration.

Cat. # 590 5 - 50 µl Micropipet

BEST SELLER