

What's New in Experiment #303

Exploring Biotechnology with GFP

ENHANCED TRANSFORMATION

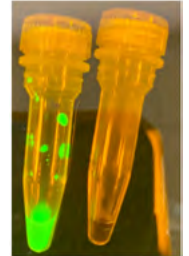
- We are recommending enhanced transformation protocol! Instead of relying on successful isolation of colonies on the source plate, a higher concentration of colonies is provided when the starter culture is made in liquid media and the cells are harvested directly from the culture.
- The instructor will provide each group with 2 tubes containing 1mL of *E. coli* cells to use in their transformation. Students will make the bacteria competent, add DNA, and heat shock to transform.



SIMPLIFIED SDS-PAGE

In years past, we had instructors making an optional Native-Protein Solution by mixing glycerol with 10X Gel Loading Solution. In the updated protocol, 10X Gel Load Solution is pre-mixed to save time in the preparation steps and assist students with gel loading.

- Image 2:**
Left - Tube with 10X Gel Loading Solution
Right - Denatured Protein



IMPROVED ISOLATION OF GFP

- Research and development was performed on a new lysozyme that allows for the successful isolation of GFP from the collected transformed cells in just 1 freeze-thaw cycle!
- The steps for preparing the lysis buffer are the same as before, except now when students resuspend their cells in the lysis buffer they will see the green fluorescent protein in the buffer almost immediately.

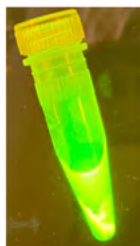
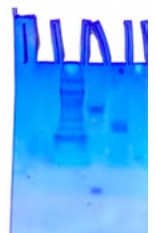


Image 1:
Isolated GFP after
1 Freeze-Thaw Cycle!

NEW FLASHBLUE™ STAIN

- Out with the old InstaStain Cards, in with the new FlashBlue™ Protein Stain powder! All that you need to do to prepare the stain is mix up the Staining/Destaining Buffer and add it to the bottle!
- Instead of 3+ hours to stain and destain your gel, the new FlashBlue™ Protein Stain allows you to stain and destain your gels in less than an hour!
- FlashBlue™ Protein stain is formulated to work with standard White Vinegar rather than Glacial Acetic Acid, for ease of preparation in the classroom.

Image 3:
(Left to right)
Ladder, native GFP,
denatured GFP



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