

Biomanufacturing Kit - Module 3:

Downstream Process

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This section contains all curriculum documents for Module 3. Each module has an outline and syllabus. Each lesson has a teacher guide document. Each lesson is a separate subsection. Documentation forms for Module 3 are linked in the last subsection of the module on this page.

A. Module 3, Syllabus and Outline

This video is a good short description of the mechanism of RFP purification via hydrophobic interaction chromatography. Most of the 'colored' fluorescent proteins available these days all have the same structure as RFP and GFP and can all be purified using the same type of columns.

- Column purification of RFP - https://www.youtube.com/watch?v=AkllY9_4rhA
- Module 3 Syllabus
- Module 3 outline

B. Module 3, Lesson 1 - Bacterial Lysis

- Module 3, Lesson 1 Teacher Guide: Module 3 Lesson 1 Teacher Guide
- Intro to Downstream Process slide deck: Introduction to Downstream Process
- Bacterial Lysis Protocol: Bacterial Lysis Protocol

C. Module 3, Lesson 2 - Protein Purification

- Module 3, Lesson 2 Teacher Guide: Module 3 Lesson 2 Teacher Guide
- Column Purification Protocol: Column Purification Protocol

D. Module 3, Lesson 3 - Measuring Protein Concentration using the Bradford Assay (Standard Curve Samples)

- Module 3, Lesson 3 Teacher Guide: Module 3 Lesson 3 Teacher Guide
- Bradford Protein Assay slide deck: Bradford Protein Assay

- Standard Curve Sample Protocol: Bradford Protein Assay Standard Curve Protocol

E. Module 3, Lesson 4 - Measuring Protein Concentration of the Purified Protein

- Module 3, Lesson 4 Teacher Guide: Module 3 Lesson 4 Teacher Guide
- Measuring Purified Protein Concentration Protocol: Measuring Purified Protein Concentration Protocol

F. Module 3, Lesson 5 - Graphing a Standard Curve

- Module 3, Lesson 5 Teacher Guide: Module 3 Lesson 5 Teacher Guide
- Graphing a Standard Curve (Excel): Graphing a Protein Standard Curve in Excel Protocol

G. Module 3, Lesson 6 - Creating a Product Label

- Module 3, Lesson 6 Teacher Guide: Module 3 Lesson 6 Teacher Guide
- Creating a Product Label slide deck: Creating a Product Label
- Creating a Product Label Assignment: Creating a Product Label Assignment
- Example Student Product Labels: Student Label Designs

H. Module 3 Documentation

- Protein Concentration Standard Curve Report
- Downstream Process Batch Record