



Overview:

- Introduce students to basic skills and theory needed to purify recombinant proteins from microbial expression hosts using FPLC
- Use enzymes from hyperthermophiles to simplify assays and minimize stability problems



Lectures:

1. Introduction to Liquid Chromatography
2. Protein Purification Basics
3. Liquid Chromatography - Ion Exchange
4. Liquid Chromatography - Hydrophobic Interaction
5. Liquid Chromatography - Gel Filtration/Affinity
6. Protein Folding and Re-folding
7. Downstream Processing

Labs:

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| 1. FPLC Operation - Purification of Protein Standards | 1 week |
| 2. AEC purification of <i>Thermotoga maritima</i> α -gal from Heat-Treated <i>E. coli</i> | 1 week |
| 3. Purification of <i>Thermotoga maritima</i> α -gal from <i>E. coli</i> by AEC, HIC, HAP | 3 weeks |
| 4. Purification of <i>Thermotoga maritima</i> α -gal from <i>E. coli</i> by His-tag/IMEC | 1 week |
| 5. Finish assays and run gels | 1 week |