

EXERCISE 8D - Postlab

1. The bands of α -lactalbumin and BSA that are visible in several of your milk fractions are particularly easy to identify. Why?
2. In which milk fractions would you expect to find α -lactalbumin? Explain why. Is α -lactalbumin present in the corresponding lanes of your gel?
3. Study the pencil sketch or photograph or photocopy of your SDS-PAGE gel, along with the table you prepared in section IV of the lab procedures, to evaluate each step of the purification procedure.
 - a. How efficient was each step in the purification procedure? How many bands were eliminated by each purification step?
 - b. Which milk fraction seems to contain the highest concentration of α -lactalbumin?
 - c. Which column chromatography fraction seems to contain the highest concentration of α -lactalbumin? Is this what you predicted in Exercise 8A, based on the standard curve for your size exclusion chromatography column? If the actual result was different from your prediction, give some possible reasons for the discrepancy.
 - d. Examine the relative amounts of α -lactalbumin and β -lactoglobulin in the 5 column chromatography fractions. Did the highest concentration of α -lactalbumin occur in the same fraction as the highest concentration of β -lactoglobulin, in an earlier fraction, or in a later fraction? Is this what you would expect? Explain why or why not.
 - e. Were you able to obtain a sample that contains only a single protein with the same molecular weight as α -lactalbumin? If not, what might you do to further purify α -lactalbumin?