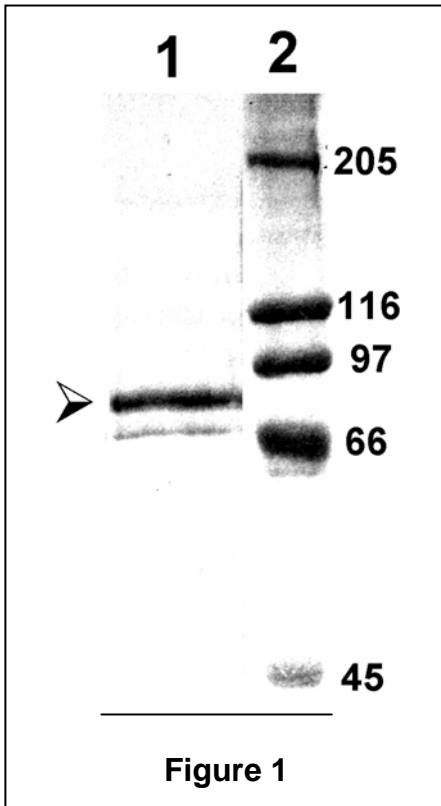


HOMEWORK #5

You would like to determine its size of a purified protein by SDS gel electrophoresis (Figure 1) and gel filtration chromatography using an HPLC (Table 1). **What is the mass of the protein (in kDa)? Explain or discuss any discrepancies.**



Standard (kDa)	Elution time (min)
1300	11.4
670	12.1
440	12.7
200	13.2

Legend to Figure 1. The protein sample (lane 1) was subjected to SDS gel electrophoresis on a 7.5% polyacrylamide gel and stained with Coomassie blue. Lane 2 shows the molecular mass standards and their sizes (in kDa) indicated. A single major protein band (arrowhead) is observed.

Legend to Table 1. This protein was also subjected to gel filtration chromatography on an HPLC column. The sample was applied to the column and eluted at a flow rate of 2 ml/min. Elution was monitored by A_{280} . A single major peak with an elution time of 12.4 min was observed (not shown). Immediately following this analysis, the column was calibrated (flow rate = 2 ml/min) with molecular mass standards and the elution times are indicated in the Table. The total column volume is 38 ml and the void volume is 16 ml.