

Title: Analytical Biochemistry [2-1-0-3]**Content:**

- Water, pH scale, buffer and solutions; cell disruption, enzyme localization, assay methods and techniques
- Separation techniques: Centrifugation, TLC and Paper chromatography,
- Protein purification - ion exchange, hydrophobic, reverse-phase and affinity chromatography, gel permeation chromatography
- Electrophoresis techniques: Proteins (Native- and SDS-PAGE, other denaturing techniques) and Nucleic acids (Agarose, PFGE),
- Criteria of protein purity: Specific activity, yield, fold and Purification table
- Membrane techniques: ultrafiltration, membrane hybridization techniques
- Separation techniques (small organic molecules and proteins): HPLC and FPLC, Gas-chromatography, Mass spectrometry, GC-MS, LCMS
- Radiotracer techniques: Radioactivity and its application in biology like transporter study, enzyme assays, receptor-ligand interactions; radioimmunoassay, ELISA,...

Texts / References:

1. D. Holme & H. Peck; Analytical Biochemistry. Longman, 1983.
2. T.G. Cooper; The Tools of Biochemistry. Wiley Intersciences, 1977.
3. R. Scopes; Protein Purification - Principles & Practices. Springer Verlag, 1982.
4. -Selected readings from Methods in Enzymology, Academic Press.
5. R.C.Price, Proteins. Lafbax Academic Press 1996.
6. Skoog et al., Fundamentals of analytical chemistry. 7th edition. Harcourt College Publisher, 2001.
7. Papers, research monograph provided by the instructor