

MANGALORE UNIVERSITY
DEPARTMENT OF BIOCHEMISTRY
MSc Biochemistry

BCP407: BIOCHEMICAL TECHNIQUES

Practical-Hard Core:4credits

8 hours/week

Course objectives:

- To use different types of chromatographic techniques to detect amino acids, lipids and carbohydrates.
- To characterize oil and fat to check their purity.
- To use various techniques to purify proteins.
- To separate and detect proteins using electrophoretic techniques.

Course outcome:

- Students would gain knowledge about the biochemical techniques and their applications in day to-day life.
- Students will also learn skills to detect, characterize, purify and separate various biomolecules using different techniques which will be helpful in their research after PG course and also while working in R&D departments of pharmaceutical companies.

Experiments:

2. Detection of amino acids by circular chromatography
3. Detection of amino acids by ascending chromatography.
4. Detection of amino acids by descending chromatography.
5. Detection of amino acids by 2D- paper chromatography.
6. Detection of amino acids by thin layer chromatography.
7. Detection of lipids by thin layer chromatography.
8. Detection of carbohydrates by paper chromatography.
9. Saponification number of oil and fat.
10. Iodine number of oil and fat.
11. Acid precipitation of proteins.
12. Preparation of casein from milk and qualitative estimation of proteins.
13. Purification of proteins: Ammonium sulphate precipitation (salting out), Dialysis, Ion exchange, Gel filtration.
14. Separation and detection of proteins – Native PAGE, Denaturing PAGE, IEF.
15. Agarose gel electrophoresis – DNA.

REFERENCES:

1. Practical Clinical Biochemistry, Harold Varley, Inter science Publishers Inc,2002
2. Clinical Chemistry: Theory, Analysis and Correlation. Kaplan, L.A. and Pesce, A.J., 4th ed. Mosby,2003.
3. Introduction to practical Biochemistry. David T.Plummer Nigam. 2007. Lab Manual of Biochemistry. By. Tata McGraw-Hill Education

