Overview used to split mixtures of constituents

Sociology, Ethics

OVERVIEW OF BIOCHEMICALTECHNIQUES Biochemical techniques describe agroup of procedures, trials, and approaches that assist researchers to evaluatethe constituents found in existing entities and the chemical consequencesessential for life processes. QUALITATIVE ANALYSIS QUANTITATIVE ANALYSIS Predominantly inductive method used to express principle or postulates. Predominantly deductive method used to investigate pre-identified concepts, structures, and postulates that sort a theory.

Statistical tests are not used in qualitative analysis. Used of statistical tests for quantitative analysis. Mainly depends on ability and accuracy of the researcher.

Mainly be determined by measuring device or tool. Generalized in small amount. Generalized in more amount. BIOCHEMICAL TECHNIQUES CHROMATOGRAPHYELECTROPHORESISSPECTROSCOPYCENTRIFUGATIONPHOTOMETRYELISA CHROMATOGRAPHYChromatography is a technique used to split mixturesof constituents and converted in components.

All methods of chromatography basedon the similar principle. They consist stationary and mobile phase. PAPER CHROMATOGRAPHYIt is a technique used for separating suspended chemicalconstituents by different migration rates through paper sheet. PrincipleSeparation occur through liquid-liquid interaction.

Itoccurs between two liquid compounds and adsorption take place on paper. ProcedureThe few drops of solution of compounds which you wantto separate out is apply on one end of paper and then dip into solution

thenstationary phase occur. If solvent moves to downward its descendingchromatography while move on upward motion called ascending chromatography. Paper is removed, dried and used for spot identification.

GEL FILTRATIONCHROMATOGRAPHYIt is also known as molecular-exclusionchromatography. it separates both small and big components. Principle This techniques based on molecular weight, shape andsize.

ProcedureThe gel used to separate small and big molecules. Themixture of solution for separation is apply on column and remove with buffer. Through the pores large molecules doesn’t passed and small molecules enters ingel beads. Through gel beads molecules were separated. HIGH PERFORMANCELIQUID CHROMATOGRAPHY (HPLC)To separate constituents of mixture by chemicalexchanges between analyzed substance and column of chromatography.

PrincipleIt is a versatile technique based on severalchromatography techniques. ProceduresAnalyzed present in small volume in mobile phase. Retardation depends on nature of analyte. The specific time in which analyte isremoved called retention time. ELECTROPHORESISElectrophoresis is a technique that separatedmacromolecules on the basis of size. GEL-ELECTROPHORESISThis type of electrophoresisused to separate proteins and nucleic acid.

Principle This technique separatemolecules based on size in addition to electric current. ProcedureGel used for mediastabilization, made wells with comb then addition of buffer take place andsample loaded on wells then

electric charges diffused in. constituents ofsample separated on the basis of their size. Components identification occur byradio labeled or u-v spectrum. SPECTROSCOPYSpectroscopy refers to the immersion and radiation of light and particleemission through matter, it depends the approaches of wavelength of emission. MASS SPECTROSCOPYIn vaccum mass spectrometerused to measure mass of ions .

PrincipleMainly composed of threesteps that is source, analyzer and detector. ProcedureAnalyte liquefied by a needleon high potential. A droplets of fine spray enters in mass spectrometry thendried by inert gas that go through analyzer in the direction of detector. Separation of protein occur through LC.

CENTRIFUGATIONCentrifugation is a proceduremanaged to distinct or distillate materials interrupted in a liquefied medium. This process basically separate two mixtures. ULTRA CENTRIFUGATIONThe significant tool ofbiochemical study is centrifugation, that apply high centrifugal force onsuspended particles or molecules present in solution and separation of suchmatter occur on ultra-centrifugation process that is distinct in weight. ExampleRbcs separated from plasma inblood, mitochondrial nuclei in cells homogenate and in complex mixture from oneto another protein. PHOTOMETRYThis is the study used tomeasure of light intensity.

FLAME PHOTOMETRYWhen metal is in contact with flame it is used to measure intensityof radiant energy. ApplicationsFlame photometry used to identify alkali andalkaline earth metal. Used in soil investigation. In industrial discarded, adhesive, crystal andpetroleum. ELISAELISA established

onimmunochemical ethics of antigen-antibody reaction. 1. The antibody beside theprotein be controlled is stable on indolent solid such as polystyrene. 2.

The biological example of proteinto be projected is applied on antibody covered surface. 3. The protein antibodycomplex is reacted with another protein specific antibody to which an catalyst iscovalently related.

These enzymes essentially produce sooner coloured products. Peroxidase, amylase and alkaline phosphatase are usually used. 4. After washing the uncontrolledantibody allied enzyme, the catalyst bound to another antibody complex is analyzed.

5. The catalytic activity is resoluteby its action on substrate to the formation of color product. This linked withconcentration of protein being assessed. ApplicationsELISA mostly used todetermine small quantities of proteins and other living substances. That is normallyused for pregnancy test to detect human chorionic gonadotropin (HCG) in urineis established on ELISA. By this, pregnancy can be revealed within few daysafter outset.

ELISA is also suitable for analysis of AIDS.