

Safety Guidelines for Biochemistry Laboratories General Guidelines for Handling Solutions of Protein Maintaining a Laboratory Notebook

Introduction to Enzymes Catalyzing Oxidation-Reductions with the Coenzyme NAD(P) Computational Techniques for Biochemistry

Software for Analysis of Data Computational Methods and Bioinformatics for Studying the Structure and Function of Proteins Background: Software and Databases

Retrieve Entries from a Database and Compare Sequences of Amino Acids

Compare the Tertiary Structures of Polypeptides

FNR; Purification and Characterization of Ferredoxin-NADP⁺ Reductase from Chloroplasts of *S. oleracea*

Preparation of a Lysate of Chloroplasts and Sequestration of Proteins by an Anion-exchange Solid Phase

Elution of Proteins from the Anion-exchange Solid Phase and Assays for the Concentration of Total Protein and FNR Activity

Isolation of FNR by Adsorption and Elution

Electrophoresis of Proteins from the Chloroplasts and Purified FNR on Gels of Polyacrylamide Cast in Solutions of Dodecyl Sulfate

Kinetic Assay for the K_m of FNR for NADPH

Estimation of the Size and Quaternary Structure of Native FNR Using Chromatography by Molecular Exclusion

Detection of FNR in Extracts from Chloroplasts of Spinach by Immunoblotting

LuxG; Purification and Characterization of a Recombinant FMN Reductase from *P. leiognathi*

Expression of LuxG-hexahistidine in *E. coli* and Its Release from the Cells by Lysis

Affinity Adsorption of LuxG-hexahistidine to a Solid Phase to which Ni²⁺ is Chelated

Electrophoresis of the Polypeptides in the Lysate and Purified LuxG-hexahistidine

Assay for the Flavin Reductase Activity of LuxG-hexahistidine

Determination of the Michaelis Constant of LuxG-hexahistidine for NADH

Determination of the Molar Concentration of LuxG-hexahistidine Spectrophotometrically

LDH; Purification and Characterization of Bovine LDH

Preparation of the Isoenzymes of LDH from Extracts of Various Tissues

Spectrophotometric Assay of the Activity of Bovine LDH

Separation and Visualization of the Isoenzymes of LDH by Electrophoresis on Cellulose Acetate

Fractionation of Proteins in Bovine Heart by Precipitation with Sulfate

Purification of LDH from Heart by Affinity Adsorption and Elution

Concentration of Protein by the Bradford Stain and Absorbance at 280 nm

Electrophoresis of Native Proteins from Bovine Heart and Purified LDH on a Gel of Polyacrylamide

Electrophoresis of Unfolded Polypeptides from Bovine Heart and Purified LDH Saturated with Dodecyl Sulfate

Determination of the Michaelis Constant, K_m NADH, of the Isoenzymes of LDH for NADH

Chromatography by Molecular Exclusion to Evaluate the Quaternary Structure of LDH

Detection of LDH in Extracts of Bovine Tissue by Immunoblotting

Experimental Design

Association of FNR with the Membranes of the Thylakoids in the Chloroplasts from Spinach

Search for Multiple Flavin Reductases in *P. leiognathi*

Assay for LDH Activity Specific to (R)-lactate in Bovine Mitochondria

Appendices

Measurement of Absorbance with Multiwell Plates and an Automated Plate Reader

Operation of the Spectronic 20D+ Spectrophotometer

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