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Science, Biology

Determining the Protein Content of Nuclear Pellets from Kidneys of Rats through Lowry Procedure

The paper “ Determining the Protein Content of Nuclear Pellets from Kidneys of Rats through Lowry Procedure" is an informative example of a lab report on biology. The objective of this experiment was to determine the level of protein in the nuclear pellets from cortex and medulla of rats. The kidney nuclear pellets were prepared and analysis of protein determination done. The purpose of the laboratory was to employ the Lowry procedure to determine the protein content of nuclear pellets from kidneys of rats. The Lowry procedure used an alkaline cupric tartrate reagent which complexes with the protein-peptide bonds and produces a purple color on the addition of phenol reagent. The absorbance was read at an appropriate wavelength between 500 and 800nm. The concentration of protein was determined by the use of a calibration curve. The experiment used Peterson’s modification of the micro-Lowry technique that precipitates the protein by the use of deoxycholate (DOC) and trichloroacetic acid (TCA) to avoid interferences from other chemicals. The precipitation was carried out in Laboratory 6.

Methods

The following method was used in the preparation of Kidney Nuclear Pellets from Cortex and medulla for protein determination.

Detailed procedure

Part 1

1. The recording of the samples to be prepared on the attached sheet was

done.

2. The sample tubes and the pellet were weighed and their weights recorded.

3. 0 ml of 0. 1 M NaOH was added to each tube and reweighing done.

4. The tubes were shaken until the pellets dissolved.

Part 2

1. The tubes were centrifuged at 10, 000 rpm for 10 minutes in order to remove the turbidity from the solution, making sure that the tubes were not disturbed or shaken prior to pipetting.

2. In every sample, there was the labeling of 2 clean microcentrifuge tubes with the same sample ID. The tubes then became assay tubes.

3. 150 ul of the original sample was added to the duplicate assay tubes.

4. 450 ul of distilled water was added to the assay tubes after which they were shaken.

5. 100 ul of DOC solution was added to all the tubes and mixed and then allowed to stand for 10 minutes.

6. 100 ul of TCA solution was added to all the tubes and mixed.

7. All the tubes were centrifuged for 10 minutes at 10, 000 x g.

8. The supernatant was removed.

Result

The result for CY41CNAfB was obtained. The pellet was preserved for use in laboratory 7.

There was a successful dilution of the sample from ratio one to four. The

results of the study were plotted on a graph for protein determination. It was concluded that the protein concentration in kidney cortex and medulla of rats was lower than that of other samples.