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Diploma in Pharmacy 2nd Year
Biochemistry & Clinical Pathology
Experiment

To detect the glucose in given sample of urine by qualitative test.

Aim:

To detect the glucose in given sample of urine by qualitative test.

Reference :

‘ Dr. Gupta G.D. , Dr. Sharma Shailesh, Kaur Manpreet, “Practical Manual of Biochemistry & Clinical Pathology” Published by Nirali Prakashan, Page no 20 – 24

Materials Required

Urine sample, Benedict's solution, Fehling's solution A. Fehling's solution B. Burner, test tube, test tube holder and measuring cylinders.

Theory :

A test for glucose in urine measures the level of glucose in urine (pee). Glucose is type of sugar and serves as body's main source of energy for the cells. Glucose is delivered to cells via blood. Generally, there is little to no glucose in urine. However. if blood sugar level is too high, kidneys will excrete some of it through urine Therefore, a high urine glucose level may indicate that blood glucose is also high, which could be an indication of diabetes. The doctor will generally order blood glucose test in case of high urine glucose level in order to help in the diagnosis.

Procedure

Benedict's Test

1) A clean and dry test tube should be taken.
2) 2ml of given urine sample should be measured using the measuring cylinder.
3) The measured urine sample should be poured into test tube.
4) 5ml of Benedict's reagent should be added into the test tube containing urine sample.
5) The test tube holder should now be fixed and the test tube should be brought near the bunsen burner and allowed to heat for 2 minutes.
6) The tube should be stirred continuously while heating.
7) The changes should be observed.

Fehling's Test

1) A clean and dry test tube should be taken
2) 2ml of given urine sample should be measured using the measuring cylinder
3) The measured urine sample should be poured into test tube.
4) 2ml of Fehling's solution A should be added into the test tube containing urine sample and shaken well.
5) 2ml of Fehling's solution B should be added into the same test tube and all the solution should be mixed slowly.
6) The test tube holder should now be fixed and the test tube should be then brought near bunsen burner and allowed to heat for 2 minutes.
7) The tube should be stirred continuously while heating.
8) The changes should be noticed.

Observation and Conclusion

1) **Benedict's Test:** A yellow precipitate gradually forms in the test tube after the sample is heated, indicating the presence of sugar in the urine sample.
2) **Fehling's Test:** A green precipitate progressively forms in the test tube when the sample is heated, indicating the presence of sugar in the urine sample.

Result :

The given sample of urine contains glucose.

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