PATHOZYME DIAGNOSTICS

SICKLE CELL Hbs

(SICKLE CELL SOLUBILITY TEST)

CAT No.: SCH

Reagent kit for qualitative determination of Hemoglobin-S in Blood.

DIAGNOSTIC SIGNIFICANCE:

Sickle cells are RBC having abnormal hemoglobin called Hb-S which reduces the oxygen carrying capacity of Hemoglobin in blood circulation lead to various diseases called sickle cell anemia. The homozygous variants are with symptomatic whereas heterozygous form of sickle cell diseases is asymptomatic called sickle cell trait. Patient with homozygous variants may have early mortality with vascular occlusion of multiple organs, severe hemolytic anemia and hypoxia. Patient with asymptomatic sickle cell disease may suffer sickle cell crisis such as hypoxia on anesthesia, during poorly pressurized air plane traveling, high altitude mountaineering or during pneumonia.

PRINCIPLE:

Erythrocytes are lysed by saponin and the released hemoglobin is reduced by dithionite in a phosphate buffer. Reduced Hbs is characterized by its very low solubility and by the formation of nematic liquid crystals (tactoids) so that in the presence of Hbs or non-S sickling hemoglobin the system becomes turbid. In either case, electrophoretic confirmation is required for conclusive identification.

SPECIMEN COLLECTION:

Collect whole blood in a vial containing a suitable anticoagulant (heparin, EDTA, oxalate) and mix thoroughly. Blood samples that have been kept for as long as 1-2 weeks at 4-8^{0}C are reportedly satisfactory. No preliminary restriction of food or fluid is required. Strong lipemic or hemolysed blood sample should not be used.

KIT PRESENTATION:

PACK SIZE	25 Test	50 Test	100 Test
R1-Sickle Cell (Buffer Reagent)	1 X 50 ml	1 X 100 ml	2 X 100 ml
R2-Sickle Cell (Lysing Reagent)	25 Tubes	50 Tubes	100 Tubes

PREPARATION OF WORKING REAGENT:

Add 2 ml of R1-Sickle Cell (Buffer Reagent) into R2-Sickle Cell (Lysing Reagent) Test Tube.

REAGENT STORAGE & STABILITY:

All reagents included in the kit are stable at RT until the expiry date stated on the label.

PROCEDURE:

1. Red cells are washed thrice with normal saline and 20 ul of packed red cells are added to 2 ml of the working phosphate buffer Test Tube and mix well to give a light pinkish violet color.
2. Place in the test tube rack for 10 minutes.
3. Read the test by holding the tube in test tube stand. Adequate illumination is necessary.

NOTE:

1.Laboratory reagents for laboratory use only.
2.Do not pipette by mouth.
3.Use reagent of same lot numbers. Do not interchange reagent of different lot numbers.
4.All positive results should be confirmed on electrophoresis.
5.Run Positive Control with every new batch.

RESULTS:

POSITIVE

If HbS or any other sickling hemoglobin is present, the solution is turbid and the lines behind the test vial will not be visible. Compare the turbidity of
Test Solution with Negative control solution, if observe more turbid, say positive.

NEGATIVE:

If no sickling Ghemoglobin is present, the clear or slightly turbid solution will permit the line to be seen through the vial. All doubtful tests, along with all positive test, should be submitted for electrophoretic confirmation.

LIMITATIONS:

Solubility test is only a screening method. This method is not a substitute to Hb Electrophoresis. A variant of Hb C – Harlem interfere this test. Recent blood transfusion may alter the results. Higher Hb F lead to false positive test result and very anemic or sample with less RBC may lead to false negative observation. Borderline Hb AS or Hb SS need to be interpreted with professional experience. Proper visibility needs appropriate illumination. Interpretation of result at inadequate light may lead to false results. Sample having very low (< 7g%) hemoglobin may lead to false negative. Repeat test using 40 µl in place of 20 µl of blood.

PROCEDURES NOTES:

Controls should be run with each series of test, Negative controls may be collected from a normal, healthy Caucasian individual. Positive controls may be purchased or obtained from samples determined to contain HbS by electrophoretic methods.

REFERENCE:

1. Schmidt, RM and Wilson, SM J.Am Med Assoc. 225:1225 (1973) 8.Greenberg, MS et al N. Eng J. Med 286:1143 (1972)
2. Tiets, NW, Fundamentals of Clinical Chemistry WB saunders, Phila P 418 (1976)
3. Henry RJ Clinical Chemistry, Principles & Technics, Harper & Row, Ny p 1176 (1974).

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Expiry Date | IVD In-Vitro Diagnostics Use | Storage | Mfg. Date | LOT Batch Number | REF Catalogue Number | See Package Insert

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