Qualitative Seminal Fructose

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1 Introduction

Fructose is present in all semen specimens except in certain cases such as azoospermic males with congenital bilateral absence of vas deferens or bilateral ejaculatory duct obstruction [1, 2]. In rare cases of retrograde ejaculation, where a small initial ejaculation occurs containing no sperm, the absence of fructose in semen is indicative of the abovementioned abnormalities [3].

2 Indications

A qualitative fructose is usually performed on azoospermic specimens with a semen volume of <1.5 mL (unless it has been run on a previous azoospermic specimen).

Note: Check semen analysis files for results. If fructose has been run previously, indicate date of routine analysis on the current worksheet for future reference. There is no need to repeat the procedure.

3 Specimen Collection

Physician instructs patient on proper collection technique (see “Semen Sample Collection and Labeling Procedure” protocol for details). Patient collects specimen into a sterile container and brings it to the laboratory.

4 Equipment and Materials

A. Polystyrene test tubes.
B. Glass beaker.
C. Hot plate.
D. Pipettes (100 μL, 1 mL) tips.
E. Resorcinol reagent (Fig. 10.1)—add 50 mg powdered resorcinol, 30 mL concentrated HCL, 67 mL distilled water.

Dissolve resorcinol powder in distilled water and carefully add HCL under a fume hood. Store refrigerated at 4 °C in a dark bottle for no longer than 1 year.

5 Quality Control

A. Each lot of resorcinol is checked initially with controls.
   1. Negative control—no semen specimen added.
   2. Positive control—pool of positive fructose semen specimens. Aliquoted and frozen for individual use.
B. A negative and positive control is run with each assay performed.

6 Procedure

A. Place 1 mL of resorcinol solution in a glass test tube.
B. Add 0.1 mL of semen. Mix gently.
C. Place glass tube into a beaker of water then place on hot plate and bring to boil (Fig. 10.2).

Note: Use caution when boiling acid solution.
7 Reporting Results

Observe color change (Figs. 10.3 and 10.4):

A. Orange-brown or orange-red color indicates the presence of fructose.
   • Report as “positive.”
B. No color change indicates the absence of fructose.
   • Report as “negative.”

Refer problems concerning the interpretation of results to the Supervisor or Director.

8 Reference Range

Fructose present in semen specimen.

9 Procedural Note

A. If the test cannot be performed within the same day, centrifuge the semen specimen to obtain the seminal plasma.
B. The seminal plasma should be frozen (−20 °C) for later analysis.

References