



HEALTH HOLDING

HAFER ALBATIN HEALTH
CLUSTER
MATERNITY AND
CHILDREN HOSPITAL

Department:	Laboratory and Blood Bank (Serology)		
Document:	Internal Policy and Procedure		
Title:	Anti-Streptolysin O (ASO)		
Applies To:	All Laboratory Staff		
Preparation Date:	January 06, 2025	Index No:	LB-IPP-171
Approval Date:	January 20, 2025	Version :	2
Effective Date:	February 20, 2025	Replacement No.:	LB-IPP-171(1)
Review Date:	February 20, 2028	No. of Pages:	03

1. PURPOSE:

- 1.1 The purpose of this document is to outline the standard operating procedure (SOP) for properly processing, examining, and reporting results for ASO test.

2. DEFINITONS:

- 2.1 ASO is an antibody generated in response to infection by a specific type of bacteria called GROUP A, β HEAMOLYTIC STREPTOCOCCI. A serious streptococcal infection will cause ASO levels to rise significantly.

3. POLICY:

- 3.1 ASOT test is used to help diagnose or monitor the treatment of conditions related to serious streptococcal infections like Endocarditis, Rheumatic Fever, Glomerulonephritis and Scarlet fever.

4. PROCEDURE:

4.1 Principle of ASO test:

- 4.1.1 ASO test method is based on an immunologic reaction between Streptococcal exo-enzymes bound to biologically inert latex particles and Streptococcal antibodies in the test sample. Visible agglutination occurs when increased antibody level is present in the test specimen.

4.2 Specimen Requirements:

- 4.2.1 Fresh serum samples should be collected in the manner routinely used for any clinical laboratory test .
- 4.2.2 Sample collected in plain tube (Yellow/ Red) only – 2 ml.
- 4.2.3 Sample must be at room temperature upon performing the test.
- 4.2.4 Sample is stable for no longer than 72 hours after collection if stored at 2- 8oC and for longer period if frozen.

4.3 Procedure:

4.3.1 Qualitative:

- 4.3.1.1 Bring reagents and specimens to room temperature.
- 4.3.1.2 Place 1 drop (50 uL) of Positive control, negative control, and serum on successive fields.
- 4.3.1.3 Re-suspend the ASO latex reagent then add 1 drop to each field.
- 4.3.1.4 Mix well then gently rock the slide for 2 mins & read immediately.

4.3.2 Semi- Qualitative:

- 4.3.2.1 Set up at least 5 rings labelled as 1:2, 1:4, 1:8, 1:16, 1:32, etc.
- 4.3.2.2 Dilute sample according to dilution factor on successive wells with glycine saline (diluted 1:20).
- 4.3.2.3 Repeat the procedure as in qualitative method.

- 4.4 **Reading:**
- 4.4.1 **NEGATIVE** – indicated by a uniform milky suspension with no agglutination as observed with negative control.
- 4.4.2 **POSITIVE** – indicated by observable agglutination in the reaction mixture.
- 4.5 **Interpretation:**
- 4.5.1 A positive reaction is indicated by any observable agglutination in the reaction mixture within 2 minutes. Record the last dilution showing a positive reaction then multiply the last positive dilution factor of the sample with the concentration of positive control (200IU/ml). The titer of the serum is the reciprocal of the highest dilution which exhibits a positive reaction.
- 4.5.2 Elevated ASO levels always indicate some form of infection from *Group A Streptococci*. High ASO levels are found only after prolonged or current infection.
- 4.5.3 Calculation:
- 4.5.3.1 $\text{Titer (mg/l)} = 200 * D$ Where : D is the highest dilution at which agglutination occurs (*200 is the conversion factor).
- 4.6 **Results reporting:**
- 4.6.1 **Qualitative Test:**
- 4.6.1.1 Negative results are released as **NEGATIVE** or < 200 mg/l.
- 4.6.1.2 Positive results are indicated by observable agglutination in the reaction mixture.
- 4.6.2 **Semi- Quantitative Test:**
- 4.6.2.1 Record the last dilution of serum with visible agglutination:

Dilution	1/2 (400 IU/ml/l)	1/4 (800 IU/ml/l)	1/8 (1600IU/ml/l)	1/16 (3200IU/ml/l)
Saline	50ul	50ul	50ul	50ul
Serum	50ul	50ul	50ul	50ul
	Mix and transfer 50ul to next well	Mix and transfer 50ul to next well	Mix and transfer 50ul to next well	Discard 50ul of the mixture

- 4.6.2.2 No visible agglutination after dilution indicated as 200 IU/ml.
- 4.7 **Quality Control:**
- 4.7.1 The positive control should show agglutination within 2 min.
- 4.7.2 The negative control should show **NO** agglutination within 2 min.
- 4.7.3 Otherwise repeat the test.

5. MATERIAL AND EQUIPMENT:

- 5.1 CRP Latex reagent
- 5.2 Positive control
- 5.3 Negative control
- 5.4 Glycine saline buffer
- 5.5 Slide with 6 circles
- 5.6 Dispenser pipette and mixing sticks
- 5.7 Shaker

6. RESPONSIBILITIES:

- 6.1 All technician assigned in Serology laboratory
- 6.2 The final report must be signed by section supervisor and approved by lab pathologist

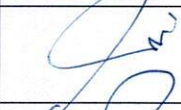

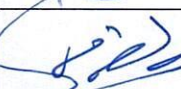

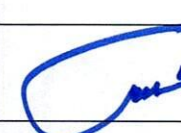
7. APPENDICES:

- 7.1 N/A

8. REFERENCES:

- 8.1 CRESCENT ASO kit Pamphlet
- 8.2 Medical Laboratory Technology Methods & Interpretations 4th ed by Ramnik Saad

9. APPROVALS:

	Name	Title	Signature	Date
Prepared by:	Dr. Fatma Hassan Ahmed	Clinical Pathologist		January 06, 2025
Reviewed by:	Dr. Kawther M. Abdou	Consultant & Lab. Medical Director		January 08, 2025
Reviewed by:	Ms. Noora Melfi Alanizi	Laboratory & Blood Bank Director		January 09, 2025
Reviewed by:	Mr. Abdulelah Ayed Al Mutairi	QM&PS Director		January 12, 2025
Reviewed by:	Dr. Tamer Mohamed Naguib	Medical Director		January 14, 2025
Approved by:	Mr. Fahad Hazam Alshammari	Hospital Director		January 20, 2025