ALT – ACTIVATED ALANINE AMINOTRANSFERASE

Principle

Intended Use

The Alinity c Activated Alanine Aminotransferase assay is used for the quantitation of alanine aminotransferase in human serum or plasma on the Alinity c analyzer.

Clinical Significance

Alanine aminotransferase measurements are used in the diagnosis and treatment of certain liver diseases (e.g., viral hepatitis and cirrhosis) and heart diseases.

Methodology

ALT present in the sample catalyzes the transfer of the amino group from L-alanine to 2-oxoglutarate, in the presence of pyridoxal-5'-phosphate, forming pyruvate and L-glutamate. Pyruvate in the presence of NADH and lactate dehydrogenase (LD) is reduced to L-lactate. In this reaction NADH is oxidized to NAD. The reaction is monitored by measuring the rate of decrease in absorbance at 340 nm due to the oxidation of NADH to NAD.

Specimen

Type of Specimen

Specimen Type	Collection Vessel
• Serum • Plasma	Serum Tubes (with or without gel barrier) Collection tubes Acceptable anticoagulants are: Lithium Heparin (with or without gel barrier) Sodium Heparin EDTA

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Specimen Storage and Stability

1. Tubes of blood are kept closed at all times in a vertical position. It is recommended that the serum or plasma be physically separated from contact with cells within two hours from the time of collection.
2. For accurate results, serum and plasma specimens should be free of fibrin, red blood cells, and other particulate matter. Ensure centrifugation is adequate to remove platelets.
3. If fibrin, red blood cells, or other particulate matter are observed, mix by low speed vortex or by inverting 10 times prior to recentrifugation.
4.

Specimen Type	Temperature	Maximum Storage Time
Serum/ Plasma	30°C	3 days
	2 to 8°C	7 days
	-40°C	2 months

Sample Dilution Procedures

Serum/Plasma
Samples with an alanine aminotransferase value exceeding 4772 U/L are flagged with the code "> 4772 U/L" and may be diluted with either the Automated Dilution Protocol or the Manual Dilution Procedure.

Automated Dilution Protocol

Serum/Plasma
The system performs a 1:5 dilution of the sample and automatically calculates the concentration by multiplying the result by the dilution factor.

Manual Dilution Procedure

Dilute the sample with saline (0.85% to 0.90% NaCl). The operator must enter the dilution factor in the Specimen or Control tab of the Create Order screen. The system will use this dilution factor to automatically calculate the concentration of the sample and report the result.

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Reagent

Reagent Preparation

- Upon receipt, place reagent cartridges in an upright position for 8 hours before use to allow bubbles that may have formed to dissipate. If a reagent cartridge is dropped, place in an upright position for 1 hour before use to allow bubbles that may have formed to dissipate.
- Reagents are susceptible to the formation of foam and bubbles. Bubbles may interfere with the detection of the reagent level in the cartridge and cause insufficient reagent aspiration that may adversely affect results.

Reagent Storage and Stability

	Storage Temperature	**Maximum Storage Time**	**Additional Storage Instructions**
Unopened	2 to 8°C	Until expiration date	Store in upright position
Onboard	System Temperature	30 days	
Opened	2 to 8°C	Until expiration date	Store in upright position. Do not reuse original reagent caps or replacement caps due to the risk of contamination and the potential to compromise reagent performance.

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Calibration

Calibration Required

For instructions on performing a calibration, refer to the Alinity ci-series Operations Manual.

Calibration is stable for approximately 30 days (720 hours), but is required with each change in reagent lot. Verify calibration with at least 2 levels of controls according to the established quality control requirements for your laboratory. If control results fall outside acceptable ranges, recalibration may be necessary.

This assay may require recalibration after maintenance to critical parts or subsystems or after service procedures have been performed.

Quality Control

See Policy Chemistry Quality Control Policy

Sample Processing

See Policy RIV-PPP-1199

Reference Range

Test unit= U/L for all ages and both sexes.

Gender	Age Year low	Age Year High	Ref Low	Ref High
	0	1	0	51
	1	13	0	30
M	13	19	0	33
M	19	250	0	59
F	13	19	0	24
F	19	250	0	41
U	13	19	0	24
U	19	250	0	41

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Analytic Range

AMR Low	AMR High	CRR Low	CRR High
6	1200	6	6000

References Abbott Alinity c Chemistry Information Sheet, 2017

Author Melanie Beermann, CLS

Distributions Kaiser Permanente Riverside Service Area Laboratory

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