Aspartate Aminotransferase; AST

Pseudonyms: Systematic name L-aspartate:2-oxoglutarate aminotransferase (EC 2.6.1.1); also oxaloacetate aminotransferase, glutamate oxaloacetate aminotransferase; formerly known as aspartate transaminase and SGOT.

General Information

Collection Container
Adults – serum (with gel separator, 4.9mL Sarstedt brown top).
Paediatrics – lithium heparin plasma (1.2mL Sarstedt orange top tube).

Type and volume of sample
The tubes should be thoroughly mixed before transport to the lab. The test may be added to a profile without provision of a separate specimen provided a full tube has been received. This test is NOT included in the standard liver function profile.

Laboratory Information

Method Principle
Aspartate + 2-oxoglutarate → (AST) → oxaloacetate + glutamate
Oxaloacetate + NADH + H+ → (MD) → malate + NAD+

Pyridoxine 5'-phosphate is a coenzyme for the AST reaction; its addition to the reaction mixture ensures that all the apoenzyme is catalytically active and measured.

Biological reference Ranges

Up to 14D		20 to 98 IU/L
Up to 3yrs		16 to 69 IU/L
>3 years	Male	<50 IU/L
	Female	<35U/L

Turnaround times
Results are available within 1 hour (urgent – for paeds please phone lab in advance of sampling) or 4 hours (routine).

Clinical Information

Used in similar fashion to ALT i.e. to detect hepatotoxicity. However, there is less hepatic specificity to AST compared with ALT. The ALT/AST ratio is sometimes used to implicate alcoholic liver disease in symptomatic individuals

Tissue specificity: the relative activity of AST in various tissues (where plasma = 1) is: liver 2850x; kidneys 1200x; heart 450x; skeletal muscle 300x.

Further information
http://www.acb.org.uk/docs/default-source/amalc/ast.pdf

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