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Adenosine Deaminase in Serum

Specimen Type	Serum
Specimen Volume	1.0 mL
Collection	Red top tube with no additives. Allow blood to clot for 30 minutes. Centrifuge at 3000 rpm for 10 minutes. Separate serum and freeze immediately.
Minimum Volume	0.3 mL
Handling	Ship frozen on dry ice.
Rejection Criteria	Hemolyzed specimens. Ambient temperature specimens. Specimens outside of listed stability.
Stability	Frozen for 3 months. Refrigerated for 7 days.
Methodology	Colorimetry
Reference Range	≤ 15.0 U/L
Turnaround Time	Up to 7 business days
CPT Code	84311
Clinical Significance	Adenosine Deaminase (ADA) is an enzyme catalyzing the deamination of adenosine to inosine. The enzyme is widely distributed in human tissues, especially high in T lymphocytes. Elevated serum ADA activity has been observed in patients with acute hepatitis, alcoholic hepatic fibrosis, chronic active hepatitis, liver cirrhosis, viral hepatitis, and hepatoma. Increased ADA activity has also been observed in patients with tuberculous effusions. As a marker of cellular immunity, activity is found to be elevated in those diseases in which there is a cell-mediated immune response. Numerous studies have demonstrated that CSF-ADA estimation is useful in the diagnosis of Tuberculous meningitis (TBM) and can differentiate TBM from normal subjects or from patients with other neurological disorders.
Principle	The ADA assay is based on the enzymatic deamination of adenosine to inosine, which is converted to hypoxanthine by purine nucleoside phosphorylase (PNP). Hypoxanthine is then converted to uric acid and hydrogen peroxide (H_2O_2) by xanthine oxidase (XOD). H_2O_2 is further reacted with N-Ethyl-N-(2-hydroxy-3-sulfopropyl)-3-methylaniline (EHSPT) and 4-aminoantipyrine (4-AA) in the presence of peroxidase (POD) to generate quinone dye which is monitored kinetically.

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