London Health Sciences Centre | St. Joseph's Health Care London

Pathology and Laboratory Medicine

AMMONIA, PLASMA

Orderable - AMM

Turnaround Time: 3 hours **STAT: 60 minutes**

Laboratory:
Core Lab

Requisition:
GENERAL LABORATORY REQUISITION

Method of Analysis:
Enzymatic Kinetic assay

Test Schedule:
As required

Specimen:

Adult	Pediatric
4 mL K_2 or K_3EDTA Lavender top Vacutainer tube	0-2 years: 2 mL Lavender top (must be venous draw) 2-10 years: 3 mL Lavender top (must be venous draw).
NICU and PAEDS. ED ONLY– Micropick specimens are acceptable – Use the CBC Microtainer tube, put on ice and deliver to Core Laboratory immediately.	

Collection Information:

Ammonia is very unstable. Specimens for ammonia MUST be received in the lab ON ICE within 30 minutes of being drawn.

Specimens should be put on ice immediately after collection, centrifuged at refrigerated temperature within 30 minutes from collection and tested immediately or frozen immediately if being shipped to another testing lab.

Proper specimen handling is critical as false increases in ammonia can occur if transport and processing instructions are not followed. Clotting releases large amounts of ammonia so specimens containing clots are unsuitable and must be rejected.

Capillary blood: Values are higher than venous plasma so this is not recommended. If capillary collection is necessary: the capillary site should be warmed to produce a good blood flow and cleansed well to ensure no trace of sweat remains. Sample should be collected into 1 microtainer tube (mix well with each drop), placed on ice and sent to the lab immediately.

Reference Ranges:

Male:	15-55 µmol/L
Female:	11-48 µmol/L

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Interpretive Comments:

Therapeutic concentration of Cefoxitin, Intralipids, Sulfasalazine and Temozolomide may lead to erroneous/false results.

Elevated in Reye's syndrome, congenital urea cycle disorders and severe liver disease. Poor correlation with hepatic encephalopathy. Often used in the workup of neonatal coma.

Special Processing:

VH/UH: Centrifuge immediately using cold centrifuge, aliquot plasma in a separate aliquot tube and analyze immediately on correct Roche analyzer.
SJH: Centrifuge immediately using cold centrifuge, aliquot plasma in aliquot tube and send on ice to UH with next available courier. Ammonia in EDTA plasma, is stable for 3 hours on ice. Ensure courier delivers samples within 2 hours of collection. Plasma must remain cold (in fridge/on ice) at all times.

Microtube collections are acceptable from **NICU or Paeds. ED only.** Process microtube collections on ice as discussed above.

Comments:

Hemolyzed samples are not acceptable as lysed red blood cells may increase ammonia levels.

Hemolysis interferes with result. Hemolyzed samples will be released with a comment attached to the result for children < 18 years old. For adults ≥18 years old, a comment will be attached to the results and grossly hemolyzed samples (H index, >201), will be canceled.

Lipemia may also cause interference.

Storage and Shipment:

Ammonia in EDTA plasma, is stable for 3 hours at 4 degrees Celsius (Favresse et al. Clin Chem Lab Med. 2018;56: e65-e68). Freeze for long term or for referred in/out shipments.