

## AMMONIA

### Related disorders

Organic acidaemias, urea cycle disorders, liver disorders

### Indication for Test

Ammonia is a waste product of protein metabolism, and is potentially toxic to the central nervous system. Increased levels are seen in many liver disorders such as cirrhosis, encephalopathy, necrosis, and Reye's syndrome. Ammonia may also be elevated with increased dietary protein. Very high levels in the neonatal period ( $>500\mu\text{mol/L}$ ) are seen in the urea cycle disorders which present in the first few days of life. Some organic acid disorders, namely methylmalonic and propionic acidaemia can also present in the neonatal period with significant hyperammonaemia.

### Methodology

The Vitros Ammonia slide is a dry, multi-layered slide, which quantitatively measures ammonia in plasma. A  $10\mu\text{l}$  drop of patient sample is deposited on the slide and evenly distributed to the underlying layers. Water and nonproteinaceous components travel to the underlying buffered reagent layer, and the ammonium ions are converted to gaseous ammonia. The semipermeable membrane allows only ammonia to pass through and prevents buffer or hydroxyl ions from reaching the indicator layer. After a fixed incubation period, the reflection density of the dye is measured at  $600\text{nm}$  using the white background of the spreading layer as a diffuse reflector.

### Sample requirements

0.5ml Lithium Heparin Plasma  
(Serum not suitable).

### Transport information

Send to the laboratory immediately. Send on ice.

### Turn Around Time

<1 hour

## Reference range

Neonate: up to 100  $\mu\text{mol/L}$

Infant/Child/Adult: up to 50  $\mu\text{mol/L}$

## Comments

All elevated ammonia results should be confirmed urgently on a second, repeat sample to exclude an artefactual increase.

If ammonia is increased, advise contact a metabolic consultant regarding investigations, treatment and monitoring.

## References

- Ortho-Clinical Diagnostics CD (v220812, Lot 2012-08-22):- 'AMON' Instructions For Use; IFU reference MP2-90\_EN Version 7.0 (28-02-12)
- Green, A., Morgan, I. (1993) Neonatology & Clinical Biochemistry, ACB Venture Publication
- MetBioNet 'Guidelines for the Investigation of Hyperammonaemia'  
<http://www.metbio.net/metbioGuidelines.asp>