

## **Neurotransmitters and Pterins – CSF**

### **Instructions for RCH clinical staff:**

1. Consultation with the Metabolic Unit is advised before collection (refer to Metabolic Fellow). Collection should be performed at a time when symptoms are most severe.
2. Obtain special CSF tubes from Laboratory Services Specimen Reception (Level 4 East Building)
3. Order tests in EPIC as directed following metabolic consultation; this may include paired CSF and blood lactate, CSF and blood glucose, CSF and plasma amino acids, CSF pyruvate, CSF neurotransmitters and pterins.
4. Collect paired blood samples in appropriate tubes for lactate, glucose, pyruvate, amino acids and additional tests as required.
5. Perform lumbar puncture and collect a minimum of 0.5 mL of CSF in each micro tube in numerical order. **DO NOT INTERCHANGE TUBES.**
  - Micro tube 1 0.5 mL CSF for lactate, glucose and protein
  - Micro tube 2 0.5 mL CSF for amino acids and pyruvate
  - Micro tube 3 0.5 mL CSF for HVA, 5-HIAA and other metabolites
  - Micro tube 4 0.5 mL CSF for Pteridines
  - Micro tube 5 0.5 mL CSF for MHPG, 3-MDOPA and storage
6. Collect additional CSF in plain sterile tubes for additional tests as required;
  - 1.0 mL CSF for cell count and cytospin (keep at room temperature)
  - 1.0 mL CSF for bacteriology micro and culture
  - Any additional tests
7. Label all tubes but ensure the tube number is clearly visible
8. Protect from light (wrap in foil). Place CSF microtubes on an ice pillow (keeping CSF plain tubes at room temperature) and hand-deliver to specimen reception within 5 minutes of collection. Hand directly to a laboratory staff member indicating nature of specimen and urgency

### **Lab Notes:**

1. CSF micro tubes are kept in the tube drawer in specimen reception. Tubes are sourced from Children's Hospital at Westmead, Sydney (2 weeks from order to receipt).
2. Process samples immediately upon arrival.
3. If micro tubes are blood-stained, centrifuge and aliquot the supernatant with a sterile pipette - biochemistry staff.
  - Micro tube 1- RCH biochemistry testing- glucose, protein and lactate
  - Micro tube 2- Freeze CSF/supernatant and place in -70C freezer LS-F-002 in sendaway box. Transport frozen on dry ice to VCGS - amino acids and pyruvate
  - Micro tubes 3-5- Freeze CSF/supernatant and place in -70C freezer LS-F-002 in sendaway box. Transport frozen on dry ice to Children's Hospital at Westmead

Note: tubes are NOT interchangeable. Micro tube 4 contains special additive.

4. Process additional tubes as per individual tests
5. If cell count (M/C/S) requested, send extra CSF tube to RCH Haematology for cell count, use CSF procedure code, then send to bacteriology.
6. If cell count (Cytospin) requested, send extra CSF tube to RCH Haematology