

REDOX panel

(Lactate, pyruvate, blood ketones assay
Lactate and pyruvate assay using CSF)

1. When should a sample be taken?

- Investigation of hyperlactataemia: redox cycle before-after meals
- Investigation of hypoglycaemia: sample taken during episode of hypoglycaemia, or having fasted, or during a fasting test

2. Preparation of tubes containing 0.8 mL perchloric acid 1 M

- Perchloric acid 1 M:

To be prepared from perchloric acid 65% to 71%, Carlo Erba ref. 409193:

- Perchloric acid: 86 mL
- Deionised water: enough to obtain 1 litre (!\ add the acid to the water). *

Storage of the solution in a bottle: 1 year at around +4°C

Conservation of 0.8 mL aliquots in 5 mL hemolysis tubes: 3 months at around +4°C

- Labelling of tubes:

Lactate, pyruvate and blood ketones assay
Perchloric acid 1 M 0.8 mL
Date of production: 01/01/2022
Expiry date: 01/04/2022
Store at between +2 and +8°C
Add 0.6 mL of blood, measured precisely

* Never add the water to the acid, add the acid to the water

3. Blood sample

The sampling protocol must be strictly adhered to.

- ▶ The pyruvate and the acetoacetate are very unstable in the blood, which must be treated immediately.
- ▶ Precise measurement of the volume of the blood is crucial for the accuracy of the results. If the ratio of blood to perchloric acid differs from that recommended by the laboratory, the results will be incorrect.

- Heparinised venous blood taken at rest, without a tourniquet
- Precisely measure 0.6 mL of blood (in an insulin syringe)
- Immediately transfer (in under 5 min.) into a tube containing 0.8 mL perchloric acid
- Agitate vigorously (cortex) and leave the tube in ice for 10 min.
- Centrifuge at 4°C, immediately remove and freeze the supernatant, which should be clear, at -20°C
- Ship frozen within 48 hours

4. CSF sample

Minimum volume: 200 µL.
Freeze at around -20°C upon reception at the laboratory.
Ship frozen within 48 hours.