Objective, application domain

This protocol allows authorized veterinarians to take blood samples (100 ml max) from horses. Attention, experimental protocols including this type of sampling must be submitted to the opinion of an ethics committee.

Methods

Blood samples for metabolome are obtained from the jugular vein at rest (Basal, T0) and/or immediately after the end of the competition (T1). The needles used are: VACUTAINER U.U. – yellow (25x0,9 mm). A maximum volume of 100 mL can be obtained.

Whole blood samples from each horse are collected in sodium fluoride and oxalate tubes (BD Vacutainer® Tubes) for metabolome profiling in order to inhibit further glycolysis that may increase the lactate levels after sampling.

Pretreatment of the blood samples is carried out immediately after the collection because the access to refrigeration and electrical power supply is always available under the field conditions.

Briefly, whole blood draw for plasma generation is put at once at 4ºC to minimize the metabolic activity of cells and enzymes and kept the metabolite pattern almost stable.

Clotting time at 4ºC is strictly controlled for all samples to avoid cell lyses and affect the components of the metabolome.

After clotting at 4ºC, the plasma is separated from the blood cells, subsequently transported to the lab at 4ºC and frozen at -80 °C (no more than 5 h later, in all cases).