

# EQUINE INSULIN ASSAY

## SAMPLE REQUIRED:

Serum (0.5 mL) or Clotted Blood (1.5 mL)

## BLOOD TUBE REQUIRED:

Plain (red top) or Gel (yellow top) tube  
(It is recommended that a sample is submitted concurrently in a fluoride oxalate tube (grey top) for blood glucose determination)

### Indications:

- To assess for insulin resistance.
- May aid in the diagnosis of equine metabolic syndrome (EMS) and pituitary intermedia dysfunction (PPID; Cushings – like syndrome).

### Protocol:

- Withhold feed for 6 hours prior to sample collection. As a guideline, it is recommended that not more than 1 biscuit of low non-structural carbohydrate grass hay per 500 kg bodyweight is provided no later than 10 pm the night before sampling.
- Collect blood sample, ideally between 8 am and 10 am.
- Store sample at 4°C. If transport to the laboratory will be delayed (> 12 hours), the sample should be centrifuged and the serum separated.

### Notes:

- EMS is a complex syndrome. The diagnosis is based on a complete history, performing a thorough physical examination (including assessment of regional adiposity and body condition scoring), documented evidence of insulin resistance, and results of additional diagnostic tests (serum triglycerides, radiographs of the feet etc).
- Assessment of insulin/glucose concentrations should be made in the absence of possible confounding factors such as stress, pain (e.g. laminitis), inflammatory disease, administration of  $\alpha$ 2-agonist drugs (e.g. xylazine, detomidine), and recent feeding.
- If single insulin/glucose measurements are equivocal, dynamic tests for insulin resistance may be required (e.g. oral or IV glucose tolerance test, combined glucose-insulin test).
- Hyperglycaemia is rarely present in horses with EMS, however blood glucose concentrations tend towards the upper end of the reference interval.