

Investigation of the *in vitro* stability of ACTH in horses

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Measurement of plasma ACTH concentration is the preferred diagnostic method for pituitary pars intermedia dysfunction (PPID) in UK. Owing to suspected *in vitro* instability of ACTH special handling procedures are advised. Previous work has indicated no difference between frozen and chilled samples or in samples separated as late as 12 hours post collection. The aim of this study was to further evaluate and define handling requirements.

Blood samples were collected from several horses with PPID and plasma was analysed for ACTH following several different pre-analysis protocols. Potential confounding effects were investigated including delays in separation of plasma from whole blood, storage temperature and method of plasma separation.

Delayed separation of plasma had no significant effect on measured ACTH although temperatures of 20°C and 40°C were associated with a significant decrease in ACTH over time (fig 1). Gravity-separated plasma samples contained a significant measurable ACTH fraction that could be eliminated by centrifugation or further settlement and that could be resuspended by agitation and tended to increase over time.

Samples intended for plasma ACTH analysis must be chilled within 3 hours of collection. Gravity separated plasma may be sent chilled to the laboratory as long as it is centrifuged by the testing laboratory before analysis.

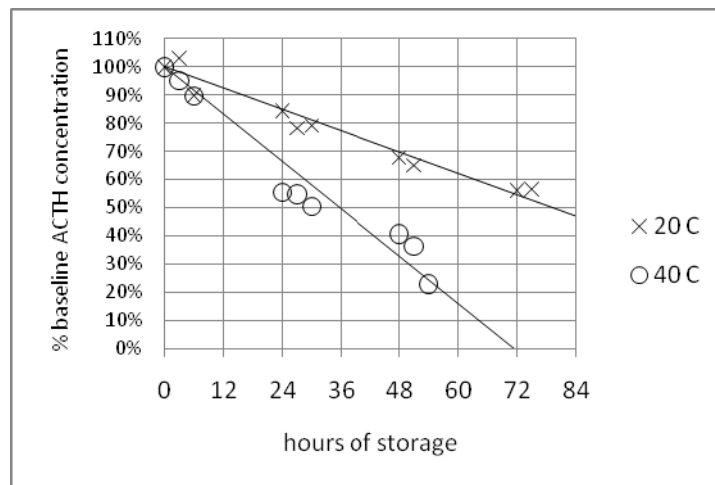


Figure 1. Mean decrease in plasma ACTH in samples stored at different temperatures.