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ENZYME IMMUNOASSAY FOR PMSG AND ITS POSSIBLE APPLICATION
IN SUPEROVULATED MICE AND HEIFERS

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A sandwich enzyme immunoassay for Pregnant Mare Serum Gonadotropin (PMSG) using a microtiterplate was developed. The intra-assay coefficient of variation (CV) was 17.8% (mean 22.5miu/ml) and 9.9% (mean 505.9miu/ml). While the inter-assay CV was 13.0% (mean 21.6miu/ml) and 10.2% (mean 496.1miu/ml). Sensitivity of the assay to PMSG was 15.6miu/ml (0.2ng/well).

The PMSG profiles in both superovulated mice and heifers were measured.

In mice, the PMSG level was measurable in the serum 4–6 days after intraperitoneal injection of 5–30iu of PMSG. The administration of anti-PMSG serum at the same dose level as the initial dose of PMSG 48 hours after the PMSG injection caused a rapid decrease in the PMSG blood level following injection, and the level disappeared within 17 hours.

In heifers, the PMSG level was measurable at 10 days after the injection of 2500–3000iu of PMSG. When anti-PMSG serum was given, the PMSG blood level decreased immediately and became undetectable after 24 hours. The timing of anti-PMSG serum injection (48, 55 and 72hrs) after PGF_{2α} administration did not significantly affect the disappearance time of PMSG. However, the rate of PMSG disappearance was affected by the dose and route of administration.

The administration of 6000 units of anti-PMSG serum intravenously caused a rapid decline and disappearance of the PMSG serum level within 7–17 hours. When 3000 units of anti-PMSG were injected intramuscularly, the PMSG serum level decreased and became unmeasurable 24 hours after administration; however, it was still detectable up to 17 hours.