Identification of Acute Phase Proteins and Assays Applicable in Nondomesticated Mammals

The serum concentration of acute phase proteins (APPs) increases dramatically in response to inflammation and tissue injury. APPs are clinically useful in a range of domesticated mammals; however, knowledge is limited in nondomesticated mammals. The detective ability of two assays for each of three potential APPs—serum amyloid A (SAA), C-reactive protein (CRP), and haptoglobin (Hp)—was evaluated in eight species. For SAA, a turbidimetric immunoassay (TIA) demonstrated significant detective abilities in the Asian elephant (Elephas maximus), impala (Aepyceros melampus), musk ox (Ovibos moschatus), and chimpanzee (Pan troglodytes), as did an SAA enzyme-linked immunosorbent assay (ELISA) in the impala. For CRP, both TIA and ELISA had significant detective abilities in the chimpanzee. For Hp, a colorimetric assay demonstrated significant detective abilities in impala, musk ox, sitatunga (Tragelaphus spekeii), and chimpanzee. As did the Hp ELISA in the impala, musk ox, and sitatunga. In conclusion, these results suggest that assays for detection of relevant APPs in several nondomesticated animals are available.

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