



U MIAMI Acute Phase Protein Laboratory

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Haptoglobin

Haptoglobin (HP) is a major acute phase protein in cows, goats, mice, pigs, rabbits, and sheep. It is a moderate acute phase protein in cats, dogs, horses, humans, and rats. It is known in many cases to be post acute marker of the inflammatory process. Whereas CRP and SAA increase rapidly very early after inflammatory stimuli, HP increases a few days later to note the extended inflammatory period. In some cases, it has been demonstrated to indicate a chronic inflammatory process. Some investigators have proposed it to be an excellent complement to CRP and SAA testing and that it should form part of an inflammatory index that could be used to monitor patients.

HP binds free hemoglobin which aids in reducing oxidative damage. It has bacteriostatic and immunomodulatory effects.

HP has been observed to increase with the following events:

- Increase with FIP in cats (Giordano et al, *Vet J* 167:38-44, 2004)
- Increase with surgery in cats (Kajikawa, et al, *Vet Immunol Immunopathol* 68:91-98, 1999)
- Increase with viral infection in cows (Saini, et al. *AJVR* 59:1101-1107, 1998)
- Increase with hyperadrenocorticism in dogs (Caldin, et al. *Vet Clin Pathol* 38:63-68, 2009)
- Increase with cancer in dogs (Planellas, et al. *Vet Clin Pathol* 38:348-352, 2009)
- Increase with parasitic infection of mice (Eckersall, et al. *Parasit Int* 50:15-26, 2011)
- Increase with bacterial infection in sheep (Skinner, *Vet Rec* 30:2-7, 2001)
- Increase with injection of inflammatory agents in pigs (Eckersall, et al. *Vet Immunol Immunopathol* 51:377-385, 1996)
- Increase with viral infection in pigs (Grau-Roma, et al. *Vet Micro* 138:53-61, 2009)
- Increase with stress due to transport in pigs (Pineiro, et al. *Vet J* 173:669-674, 2007)
- Increase with stress due to bleeding and handling protocols in pigs (Salamano, et al. *Vet J* 177:100-115, 2008)
- Increase with infection of inflammatory agents in rats (Schreiber, et al. *Ann NY Acad Sci* 557:61-85, 1989)