Haptoglobin

Haptoglobin (abbreviated as Hp) is the protein that in humans is encoded by the HP gene.

In blood plasma, haptoglobin binds free hemoglobin (Hb) released from erythrocytes with high affinity and thereby inhibits its oxidative activity. The haptoglobin-hemoglobin complex will then be removed by the reticuloendothelial system (mostly the spleen). In clinical settings, the haptoglobulin assay is used to screen for and monitor intravascular hemolytic anemia. In intravascular hemolysis, free hemoglobin will be released into circulation and hence haptoglobin will bind the hemoglobin. This causes a decline in haptoglobin levels. Conversely, in extravascular hemolysis the reticuloendothelial system, especially splenic monocytes, phagocytose the erythrocytes and hemoglobin is relatively not released into circulation; however, excess hemolysis can release some hemoglobin causing haptoglobin levels to be decreased. Therefore haptoglobin is not a reliable way to differentiate between intravascular and extravascular hemolysis.

Haptoglobin (Hp) genotype has been shown to be a predictor of clinical outcomes in subarachnoid hemorrhage.

In humans, two alleles for haptoglobin have been described that give rise to different haptoglobin proteins and three major genotypes, haptoglobin 1/1, 2/1, and 2/2 [1)].

see Haptoglobin 2 2 genotype

1)
Asleh R, Levy AP: In vivo and in vitro studies establishing haptoglobin as a major susceptibility gene for diabetic vascular disease. Vasc Health Risk Manag1 :19 –28,2005

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