



詳細著作與計畫
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Teaching subject: Clinical chemistry

實驗室簡介

血漿中Haptoglobin (Hp) 是一個急性期蛋白質可結合並代謝紅血球破裂後釋放出的血紅素，降低氧化壓力傷害。Hp是從兩個對偶基因1跟2轉譯的單體合成的多元體共有Hp1-1、Hp2-1、Hp2-2三型。基於HP型別的不同與體內發炎相關，因此本實驗室做HP分型及定量以探討其相關性。本實驗室進行Hochberg's Hp-Hb結合法在PAGE電泳下鑑別出Hp1-1、Hp2-1或Hp2-2三型，也以競爭性免疫分析法加以定量個體血漿中Hp之濃度。

核心技術

臨床生化免疫檢驗、核酸技術。

Laboratory profile

Haptoglobin (Hp), an inflammatory marker is an abundant hemoglobin-binding protein present in the plasma. There are two common alleles for the Hp gene (1 and 2) manifesting as three major phenotypes 1-1, 2-1 and 2-2. One of the major functions of Hp is to capture released hemoglobin during excessive hemolysis and to scavenge the hemoglobin-induced free radicals during oxidative stress. So We perform Hp phenotyping with Hochberg's Hp-Hb binding method by polyacrylamide gel electrophoresis in plasma samples from subjects with different metabolic function. Then we measure the three plasma levels of Hp phenotypes by using ELISA.

Core Technologies

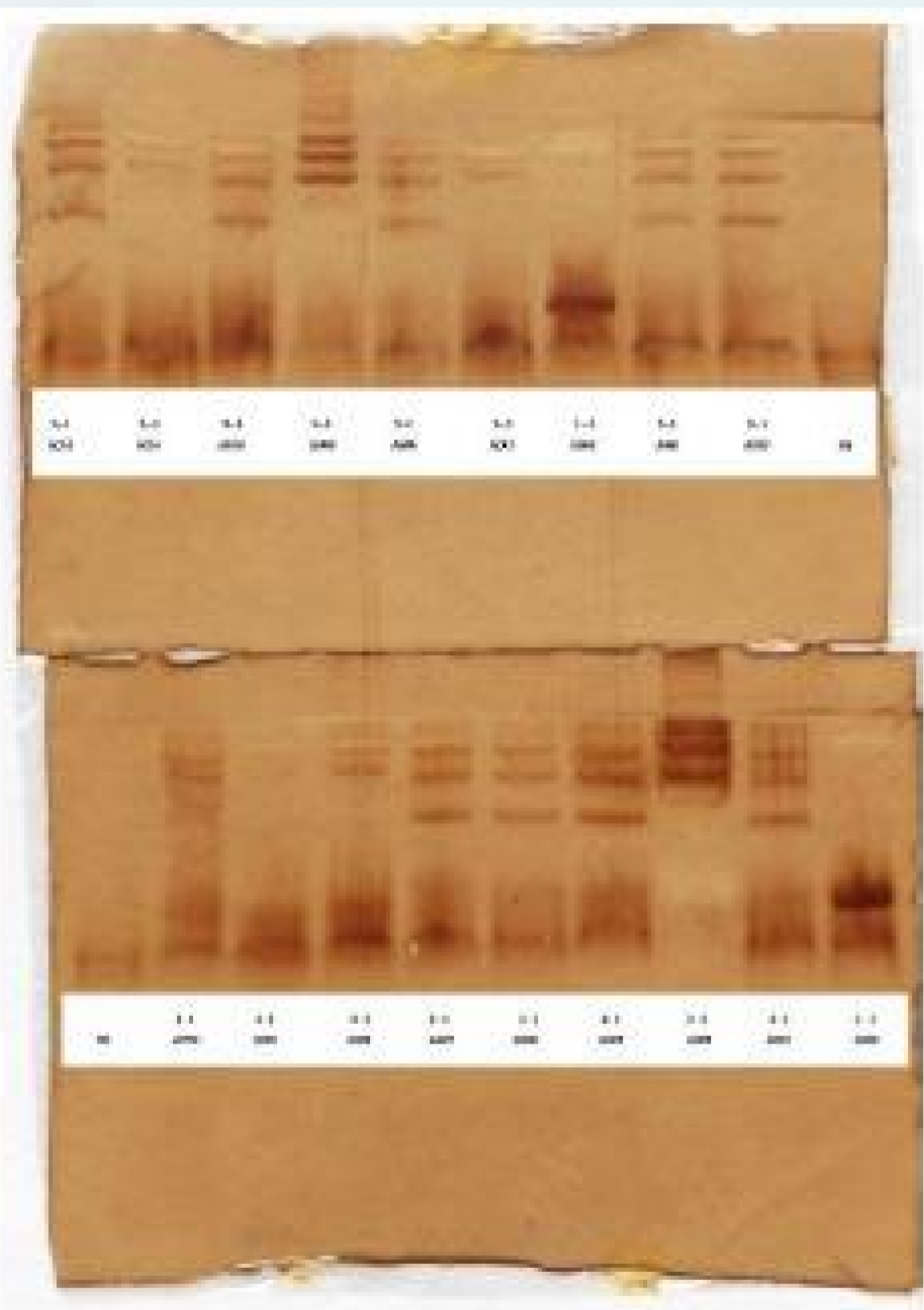
clinical chemistry, immunoassay and NAT

Important publications

"Antitumor Effects with Apoptotic Death in Human Promyelocytic Leukemia HL-60 Cells and Suppression of Leukemia Xenograft Tumor Growth by Irinotecan HCl," *Environmental Toxicology*, Vol. 30, No. 7, 2015, 07, p. 803-815.
"Glycan binding profile of a fucolectin-related protein (FRP) encoded by the SP2159 gene of *Streptococcus pneumoniae*," *Biochimie Open*, Vol. 6, 2017, 12, pp. 17-23.
"Mangiferin induces immune responses and evaluates the survival rate in WEHI-3 cell generated mouse leukemia in vivo" *Environmental Toxicology*, Vol. 36, 2021, 08, p. 77-85.
"Pathogenicity of Avian Polyomaviruses and Prospect of Vaccine Development" *viruses*, Vol. 14 (9), 2022, 9, p. 2079.

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Serum samples on a 7% native-PAGE and stained with DAB were resulting in three Hp phenotype: Hp 1-1, 2-1, and 2-2.

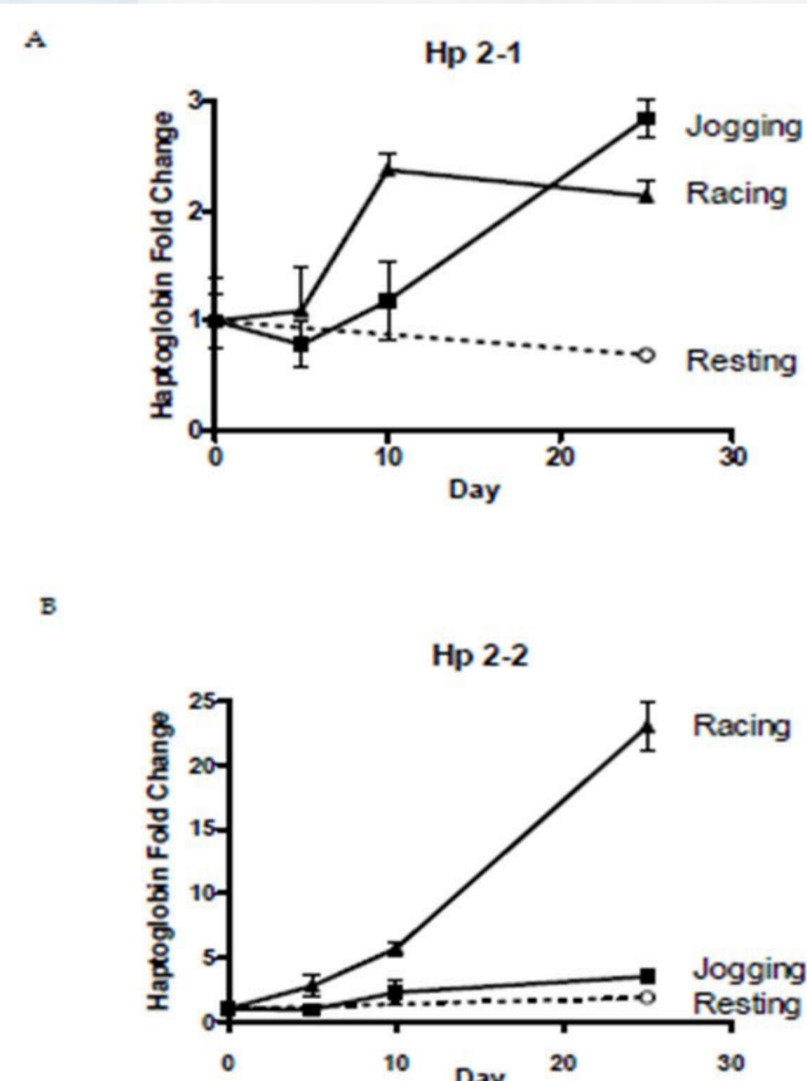


Fig. 2. Changes of plasma Hp levels in fold after one single exercise. Twelve males received a running program with endurance exercises (jogging for 60 min) with a 30-day resting period and followed by an exposing run (100-m for about 15 seconds). In 6 individuals with Hp2-1 (A), the Hp basal levels were relatively higher than those with Hp 2-2. Hp 2-1 levels increased 2.8-fold at day 25 with the mean \pm SD from 1.3 ± 0.6 mg/ml for jogging ($p=0.063$). In 6 individuals with Hp 2-2 (B), the Hp basal levels were relatively low, but markedly increased by about 20-fold at day 25 from 0.09 ± 0.13 mg/ml for racing ($p<0.001$).