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The plasma protein binding of the endogenous glucocorticosteroids is of vital importance for the concentrations in hair and saliva

Short Title: Plasma protein binding of glucocorticosteroids

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Highlights

- The plasma protein binding (PPB) of endogenous glucocorticosteroids were determined, for cortisone at first time.
- During chronic stress the PPB of F seems to be constant, in contrast to the PPB of E.
- The PPB affects the hair and saliva concentrations.

Abstract

Background: The endogenous glucocorticosteroid cortisol (F) and its metabolite cortisone (E) are known to be involved in stress adaption and anti-inflammatory and immune regulatory effects. The ratios of F to E in the matrices serum, hair and saliva are different. The shift of this ratio by the enzyme activity of 11β-Hydroxysteroid-dehydrogenase, which inactivates cortisol, was often discussed. The aim of our study was to calculate the contribution of the plasma protein binding (PPB) to this shift. The PPB of F is known to be 96 % of the total F-Concentration in serum. The PPB of E wasn't analyzed in previous studies.