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# First characterizations by capillary electrophoresis of human Chorionic Gonadotropin at the intact level

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## Abstract

In the present work, the first characterizations by Capillary Electrophoresis of the human Chorionic Gonadotropin (hCG) hormone at the intact level were carried out. hCG is a heterodimeric glycoprotein, specific to the human pregnancy, consisting of an  $\alpha$  and a  $\beta$  subunit, so-called hCG $\alpha$  and hCG $\beta$ , respectively. hCG has 8 potential glycosylation sites leading to a high number of isoforms (including glycoforms and other post-translational modifications) that we are interesting to characterize. First, Capillary Gel Electrophoresis (CGE) was used to separate the isoforms of two hCG-based drugs: Ovitrelle® (recombinant r-hCG) and Pregnyl (hCG isolated from the urine of pregnant women, u-hCG). As expected, CGE led to a better resolution than SDS-PAGE and confirmed the large heterogeneity of hCG. Different CGE profiles were obtained for the two hCG-based drugs, varying in number of peaks, migration times, and peak intensities, thus demonstrating that the drugs contain isoforms, different in nature and proportion. This result was confirmed by Capillary IsoElectrophoretic Focusing (CIEF). The pI ranges of the hCG isoforms were found between 3.4 and 4.7, and 4.5 and 5.2 for r-hCG and u-hCG, respectively. This information was further used to develop the

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