Reversed-Phase High-Performance Liquid Chromatography Characterization of Human Menopausal Gonadotropin Preparations

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Specific reversed-phase high-performance liquid chromatography (RP-HPLC) condition for the analysis of human menopausal gonadotropin (hMG), a urinary product with follicle stimulating hormone (FSH) and luteinizing hormone (LH) biological activity, was set up in this work. Four heterogeneous preparations of urinary hMG were analyzed and in all of them a similar gonadotropin fraction (34-43%) was found, though with a great variety of protein content (30.4 to 909 µg/vial). Surprisingly, in two of the analyzed hMG preparations, hLH was not detected. Otherwise, in all of them human chorionic gonadotropin (hCG) was found, probably added to compensate for a low hLH activity. The peaks attributed to hFSH, hCG and hLH were identified on the basis of their *in vivo* bioactivity determination and of their retention times in RP-HPLC. These were comparable to those determined for the individual purified hormones chromatographed under identical conditions: 22.55 ± 0.18, 34.61 ± 0.22 and 38.04 ± 0.24 min, respectively for hFSH, hCG and hLH (level of significance, $p < 0.001$; $n = 3$). Quantification of the different gonadotropins in the heterogeneous preparations was also carried out, though with accuracy limitations.

This work was supported by FAPESP, São Paulo, Brazil (07/56094-2), and by the National Research Council (CNPq), Brasilia, Brazil (PQ 303839/2008-2 and PQ 300473/2009-5).

Key words: hMG; hFSH; hLH; hCG; RP-HPLC