

论文

尿中睾酮与表睾酮的三甲基硅烷化及其比值的GC—MS测定

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摘要:

对睾酮及表睾酮的三甲基硅烷化进行了详细考察,找到了较好的抗氧化剂巯基乙醇,确定了较好的衍生化条件,衍生化产物单一。并采用GC—MS法测定了尿中睾酮与表睾酮的比值。实验条件为:以氦为载气,SE—54熔融石英柔性毛细管柱、程序升温进行样品分离,多离子检测(MID),监测m/z432的离子。该法专属、灵敏、快速。睾酮与表睾酮比值在1:1~10:1(睾酮为20ng/μl)与相应峰面积比呈线性关系(r=0.998),最低检测限为1ng,最低检测尿药浓度为8ng/ml。

关键词: 三甲基硅烷化 睾酮 表睾酮 抗氧化剂 GC—MS法

TRIMETHYLSILYLATION OF TESTOSTERONE, EPI -TESTOSTERONE AND DETERMINATION OF THEIR RATIO IN URINE BY GC-MS

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Abstract:

The trimethylsilylation of testosterone and epitestosterone was discussed in detail in this report. Both derivative conditions under which testosterone and epi-testosterone were prepared into TMS-derivatives in the presence of mercaptoethanol as an antioxidantizing agent and method for the analysis of the ratio of testosterone to epi-testosterone in urine, based on GC-MS, had been established. The conditions of detection were: carrier gas was helium, derivatives were separated with SE-54 fused silica capillary column, using temperature program and detected by using multiple ion detection mode in which the ion of m/z 432 was the monitoring ion. The method is rapid, sensitive and specific. For the ratio of testosterone to epi-testosterone (testosterone: 20 ng/μl), there is a linearity between ratio 1:1 and 10:1 (r=0.998), the limit of detection for testosterone and epi-testosterone is 1 ng, and the minimum concentration of detection in urine is 8 ng/ml.

Keywords: Testosterone Epi-testosterone Antioxidizing agent GC-MS Trimethylsilylation

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