

论文

甾体激素的比色分析 I. $\Delta^{1,4}$ -3-酮基及 Δ^4 -3-酮基甾体激素与异烟肼的比色测定

李金妹;朱贵珍;彭司勋

江苏省卫生厅药品检验所,南京;南京药学院

摘要:

本文对 $\Delta^{1,4}$ -3-酮基激素(去氢皮质醇,去氢可的松)与异烟肼的反应条件进行了试验,生成脎的最大吸收峰在400毫微米波长,符合Beer定律。运用于片剂的测定与对照法比较,结果一致,但本法较简便,省时。对 Δ^4 -3-酮基的六种激素在Umberger方法基础上,设计了用比色计测定的方法,运用于各种制剂的测定,与对照法比较,结果一致。

关键词:

COLORIMETRIC DETERMINATION OF $\Delta^{1,4}$ -3-KETOSTEROID AND Δ^4 -3-KETOSTEROID HORMONES AND THEIR PREPARATIONS BY MEANS OF ISONICOTINIC ACID HYDRAZIDE

LEE KING-MAI; JU KUA-CHING PENG SZU-HSUN

Abstract:

Isonicotinic acid hydrazide as a reagent for the spectrophotometric determination of Δ^4 -3-ketosteroid hormones based on the formation of their hydrazones in acid-alcohol solution has been reported by Umberger. The method was applied to the analysis of vegetable oil solution of testosterone propionate and progesterone. It was pointed out to be suitable for the estimation of other Δ^4 -3-ketosteroids, such as methyl-testosterone cortisone, hydrocortisone, and desoxycorticosterone. However, no mention of further application to the $\Delta^{1,4}$ -3-ketosteroid hormones was made. We found that prednisone and prednisolone can also react with isonicotinic acid hydrazide to give yellow solutions having an absorption maximum at 400—402 m μ . The conditions for the colorimetric determination of these two hormones were studied and the method was applied to the analysis of their tablets. Furthermore, by varying the concentration of hydrochloric acid and isonicotinic acid bydrazide of Umberger's procedure, the above mentioned Δ^4 -3-ketosteroid hormones and their preparations can be determined colorimetrically. The results obtained by the proposed method both for six Δ^4 -3-ketosteroid and two $\Delta^{1,4}$ -3-ketosteroid hormones were found in close agreement with those of the official methods in U.S.P. XVI and B.P. 1958. As a result of this study, a simple and accurate method has been proposed for the colorimetric determination of eight steroid hormones and most of their preparations by using the same reagent.

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