



Steroids

Analysis of androgen hormones as partial silyl derivatives

Application Note

Clinical Research

Authors

Agilent Technologies, Inc.

Introduction

Gas chromatography using an Agilent CP-Sil 5 CB column separates 26 androgen hormones as partial silyl derivatives in 150 minutes.



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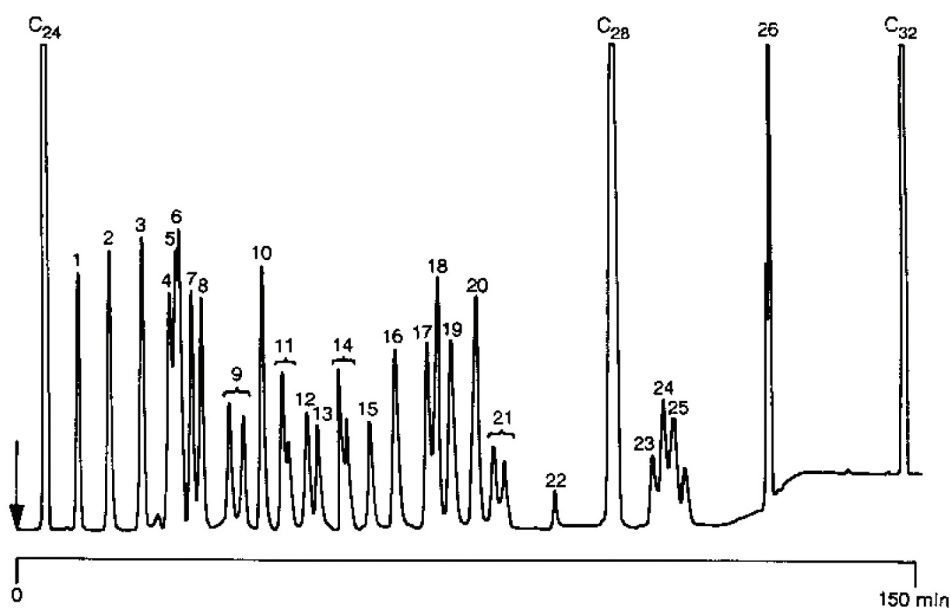
Conditions

Technique : GC-capillary
Column : Agilent CP-Sil 5 CB, 0.32 mm x 25 m fused silica
WCOT CP-Sil 5 CB (df = 1.2 μ m) (Part no. CP7760)
Temperature : 210 °C (30 min) \rightarrow 235 °C, 0.25 °C/min \rightarrow
280 °C, 5 °C/min (10 min)
Carrier Gas : H₂, 80 kPa (0.8 bar, 11.4 psi)
Injector : Solid phase injector
Detector : FID, T = 300 °C
Sample Size : 2 μ L
Concentration Range : 10 ng of each steroid
Solvent Sample : ethylacetate

Courtesy : A. Mühl and K. R. Herkner,
Ludwig Boltzman Institut für Klinische Endokrinologie,
Vienna, Austria

Peak identification

1. 5 β -androstane-3 α ,17 β -diol
2. 5 α -androstane-3 α , 17 β -diol
3. 5 β -androstane-3 α -ol-17-one
(etiocholanolone)
4. 5 α -androstane-3 α -ol-17-one
(dehydroepiandrosterone)
5. 5 α -androstane-3 α -ol-17-one
(androsterone)
6. 5 α -androstane-3 β -ol-17-one
(epiandrosterone)
7. 1,3,5(10)-estratriene-3,17 α -diol
(17 α -estradiol)
8. 1,3,5(10)-estratriene-3 α ,17 β -diol
(estradiol)
9. 5 α -androstane-17 β -ol-3-one
(dihydrotestosterone)
10. 1,3,5(10)-estratriene-3-ol-17-one
(estrone)
11. 4-androstene-17 β -ol-3-one
(testosterone)
12. 5 β -androstane-3 α ,11 α ,17 β -triol
13. 5 β -androstane-3 α ,16 α ,17 β -triol
14. 4-androstane-3, 17-dione
(androstendione)
15. 5 α -androstane-3 β ,16 α ,17 β -triol
16. 5 β -androstane-3 β ,11 β ,17 β -triol
17. 5 β -androstane-3 α ,11 β ,diol-17-one
18. 5-pregnene-3 β -ol-20-one
(pregnenolone)
19. 5 α -androstane-3 β ,11 β ,17 β -triol
20. 5 α -androstane-3 β ,11 β ,diol-17-one
21. 4-androstene-6 β ,17 β -diol-3-one
22. 5 β -pregnane-3 α ,17 α ,20 α -triol
(pregnantriol)
23. 4-androstene-17 β ,19-diol-3-one
24. 4-pregnene-3,20-dione
(progesterone)
25. 4-androstene-11 β ,17 β -diol-3-one
26. 4-pregnene-17 α -ol-3,20-dione



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