GCMS CHARACTERIZATION OF CARDANOLS AND GINKGOLIC ACIDS FROM THE ROOTS OF *OZOROA INSIGNIS*

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Bioassay-guided fractionation of the ethanolic root extract of *Ozoroa insignis*, a medicinal plant collected in Guinea-Bissau, led to the isolation of a 41-member library of alkyl and alkenylphenols, whose structures were determined by GCMS, ^{1}H and ^{13}C NMR. Determination of double-bond positions in the side chains of alkenylphenols were established by means of methylthiolation-GCMS.[1]

The pool of cardanols and ginkgolic acid methyl esters identified in the present work possess some unusual structural features. Their alkyl side chains varies from 13 to 25 carbons in length, and for monounsaturated side chains, double bonds in 2, 5, 7, 10-14, and 19 positions could be confirmed. A C25:2-$\Delta^{10,14}$ cardanol (**30**) was also identified.

References

1. Francis, G.W., Veland, K., *Journal of Chromatography A*, **218**, 379, 1987.

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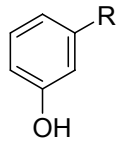
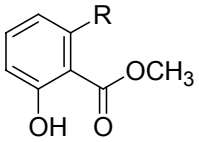


Cardanols



Ginkgolic acid methyl esters

1 C13:0 R = $C_{13}H_{27}$
2 C14:0 R = $C_{14}H_{29}$
3 C15:0 R = $C_{15}H_{31}$
4 C16:0 R = $C_{16}H_{33}$
5 C17:0 R = $C_{17}H_{35}$
6 C10:1 R = $(CH_2)_4CH{=}CH(CH_2)_3CH_3$
7 C11:1 R = $(CH_2)_9CH{=}CH_2$
8 C12:1 R = $(CH_2)_9CH{=}CHCH_3$
9 C13:1 R = $CH_2CH{=}CH(CH_2)_9CH_3$
10 C13:1 R = $(CH_2)_9CH{=}CHCH_2CH_3$
11 C13:1 R = $(CH_2)_{10}CH{=}CHCH_3$
12 C13:1 R = $(CH_2)_{11}CH{=}CH_2$
13 C14:1 R = $(CH_2)_9CH{=}CH(CH_2)_2CH_3$
14 C15:1 R = $(CH_2)_6CH{=}CH(CH_2)_6CH_3$
15 C15:1 R = $(CH_2)_9CH{=}CH(CH_2)_3CH_3$
16 C15:1 R = $(CH_2)_{10}CH{=}CH(CH_2)_2CH_3$
17 C15:1 R = $(CH_2)_{11}CH{=}CHCH_2CH_3$
18 C15:1 R = $(CH_2)_{13}CH{=}CH_2$
19 C16:1 R = $(CH_2)_9CH{=}CH(CH_2)_4CH_3$
20 C17:1 R = $(CH_2)_9CH{=}CH(CH_2)_5CH_3$
21 C17:1 R = $(CH_2)_{11}CH{=}CH(CH_2)_3CH_3$
22 C17:1 R = $(CH_2)_{12}CH{=}CH(CH_2)_2CH_3$
23 C18:1 R = $(CH_2)_9CH{=}CH(CH_2)_6CH_3$
24 C19:1 R = $(CH_2)_9CH{=}CH(CH_2)_7CH_3$
25 C20:1 R = $(CH_2)_9CH{=}CH(CH_2)_8CH_3$
26 C21:1 R = $(CH_2)_9CH{=}CH(CH_2)_9CH_3$
27 C25:1 R = $(CH_2)_{10}CH{=}CH(CH_2)_{12}CH_3$
28 C25:1 R = $(CH_2)_{11}CH{=}CH(CH_2)_{11}CH_3$
29 C25:1 R = $(CH_2)_{17}CH{=}CH(CH_2)_5CH_3$
30 C25:2 R = $(CH_2)_9CH{=}CH(CH_2)_2CH{=}CH(CH_2)_9CH_3$
31 C25:1 R = $(CH_2)_{18}CH{=}CH(CH_2)_4CH_3$

32 C15:0 R=$C_{15}H_{31}$
33 C16:0 R=$C_{16}H_{33}$
34 C17:0 R=$C_{17}H_{35}$
35 C18:0 R=$C_{18}H_{37}$
36 C22:0 R=$C_{22}H_{45}$
37 C23:0 R=$C_{23}H_{47}$
38 C24:0 R=$C_{24}H_{49}$
39 C14:1 R=$(CH_2)_5CH{=}CH(CH_2)_6CH_3$
40 C19:1 R=$(CH_2)_{12}CH{=}CH(CH_2)_3CH_3$
41 C21:1 R=$(CH_2)_5CH{=}CH(CH_2)_{12}CH_3$