

Short report

Antimicrobial activity of the essential oil of  
*Hyptis suaveolens* leaves

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**Abstract**

The essential oil of *Hyptis suaveolens* leaves showed antibacterial activity at 5 mg/ml concentration against two gram-positive and four gram-negative bacteria. © 1999 Elsevier Science B.V. All rights reserved.

*Keywords:* *Hyptis suaveolens*; Essential oil; Antibacterial activity; Antifungal activity

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**Plant.** *Hyptis suaveolens* (L.) Poit. (Lamiaceae) fresh leaves collected from the forest plantations of the Forest Research Institute of Nigeria (FRIN), Ibadan, Nigeria, in December 1996 and identified by Mr. T.K. Odewo (FRIN). A voucher specimen was deposited at the herbarium of the institute.

**Uses in traditional medicine.** The leaves are used as an anticancer [1] and antifertility (in females) [2] agent, for the treatment of colics, stomach ache, and fever [3].

**Previously isolated classes of constituents.** Fatty acids [4], sesquiterpenoids [5–11], triterpenoids [12].

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**Tested material.** Essential oil (yield: 0.21%) obtained by hydrodistillation. The major components were sabinene (16.5%), *trans*- $\alpha$ -bergamotene (13.6), terpinen-4-ol (9.6),  $\alpha$ -pinene (8.5),  $\beta$ -caryophyllene (6.2), caryophyllene oxide (4.5).

**Studied activity.** Antibacterial and antifungal activities by agar disc diffusion method [13].

**Used micro-organisms.** Listed in Table 1.

Table 1  
Antimicrobial activity of the essential oil of *Hyptis suaveolens* leaves<sup>a</sup>.

Microorganisms	Inhibition zone (mm)			
	E.o.	Amp	Gen	Tio
<b>Gram-positive</b>				
<i>Staphylococcus aureus</i> UCH 560	–	R	14	n.t.
<i>S. aureus</i> UCH 681	–	–	10	n.t.
<i>S. aureus</i> UCH 511	14	R	12	n.t.
<i>Bacillus cereus</i>	10	–	14	n.t.
<b>Gram-negative</b>				
<i>Escherichia coli</i> NCTC 7001	12	9	14	n.t.
<i>E. coli</i> UCH 307		12	12	14
<i>E. coli</i> UCH 270		10	–	–
<i>Pseudomonas aeruginosa</i> NCTC 6750	–	9	10	n.t.
<i>P. aeruginosa</i> UCH 655	14	–	–	n.t.
<b>Fungus</b>				
<i>Candida albicans</i>	16	n.t.	n.t.	16

<sup>a</sup> Values are the mean of three replicates. *Abbreviations.* E.o: essential oil (in 10% DMSO dilution) 5 mg/ml; Amp: ampicillin 2.5  $\mu$ g/ml; Gen: gentamycin 1  $\mu$ g/ml; Tio: tioconazole 5  $\mu$ g/ml; R: resistant; n.t.: not tested; –: no inhibition; NCTC: National Collection Type Cultures; UCH: Clinical isolates, University of Ibadan, College Hospital Collection.

**Results.** Reported in Table 1.

**Conclusions.** The essential oil of *H. suaveolens* displayed significant inhibitory activity against two gram-positive and four gram-negative bacteria and was also very active against the fungus *Candida albicans*.

### Acknowledgements

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