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Antibacterial activities of triterpenes from leaves of *Cissus incisa*

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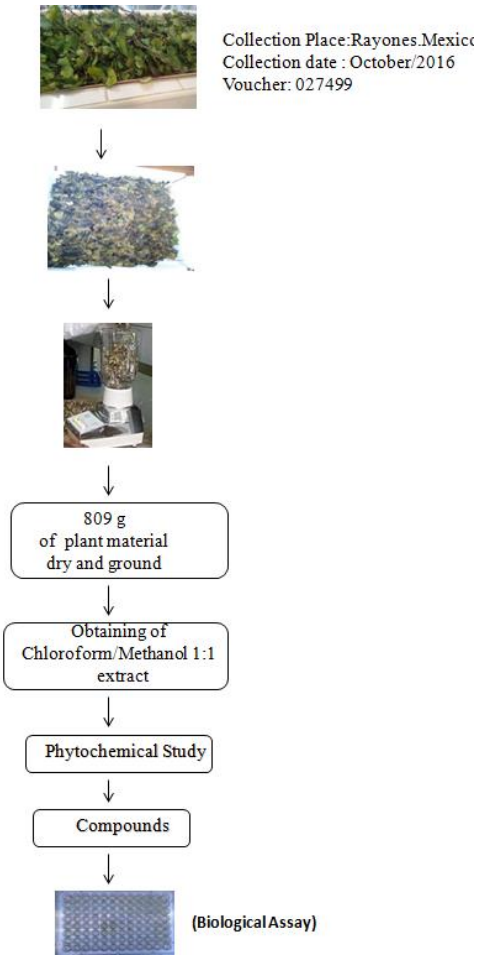
Graphical Abstract



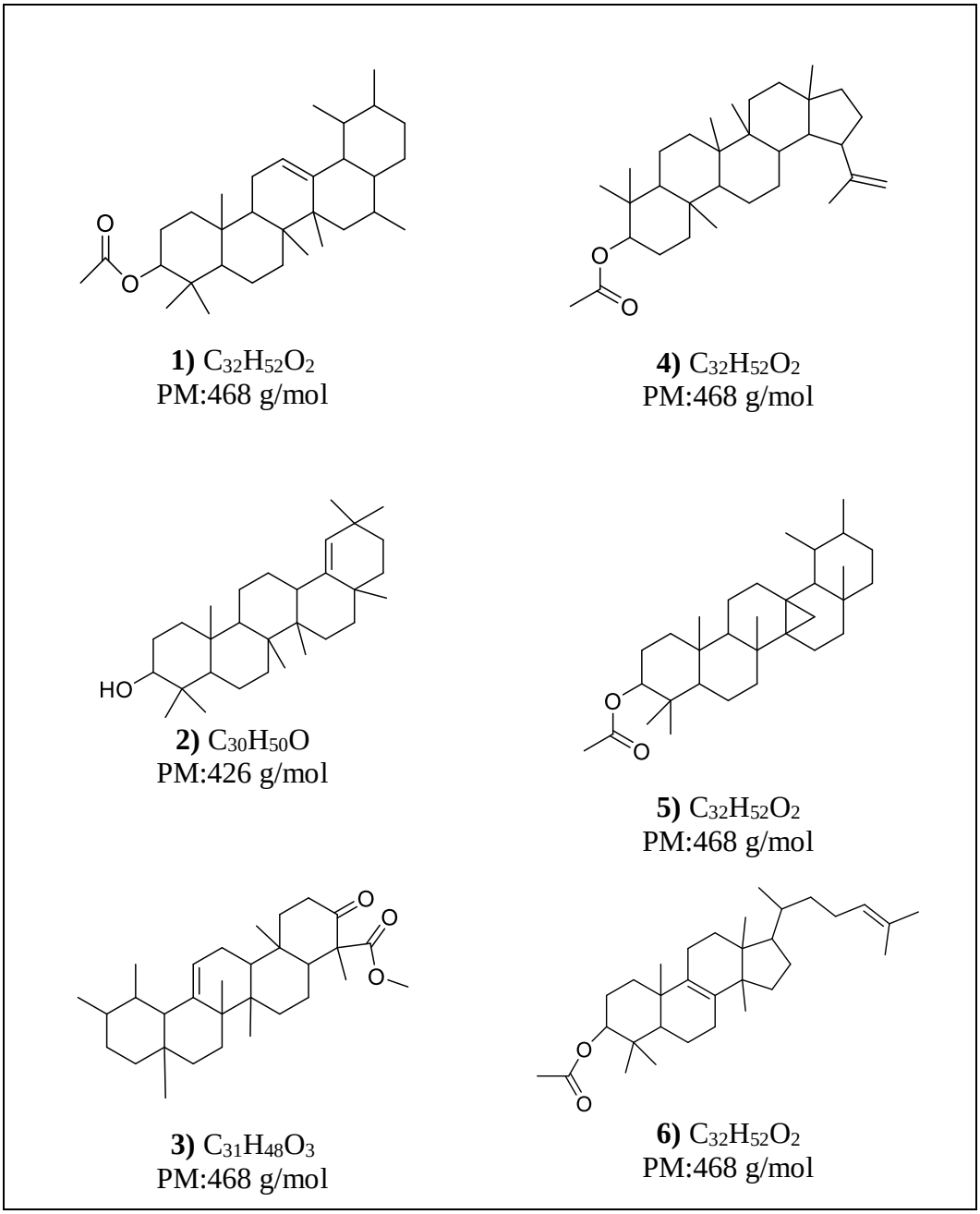
Abstract.

Terpenoids play a crucial role in the performance of diverse ecological functions in response to biotic and abiotic factors. They are classified as secondary metabolism products. Among their functions are:be pollinating attractants, herbivore deterrents, insecticides / repellents, antibacterial compounds. Like many other natural products, they show biological activities, which have been exploited in the prevention and treatment of human diseases. As part of the phytochemical study performed on the *Cissus incisa* specie, the characterization of a triterpenes mixture of the chloroform / methanol 1:1 extract was carried out. In addition, the antibacterial activity was evaluated against nine strains of multi-resistant clinical isolates. As a result, *C. incisa* can be considered for further investigations as a source of compounds with antibacterial properties.

Key words: triterpenes; *Cissus incisa*; GC/MS; antibacterial.

Results and Discussion

Figure 1. Triterpenes characterized by GC / MS in the leaves of *Cissus incisa*



1) Urs-12-en-3-ol,acetate ,3β
2) 4,4,6a,6b,8a,11,11,14b-octametil-1,2,3,4,4a,5,6,6a,6b,7,8,8a,9,10,11,12b,13,14,14a,14b-icosahidropicen-3-ol
3) (M)urs-12-en-24- oic acid,3-oxo-,methyl ester,(+)
4) (M)Lup-20(29)-en-3-ol,acetate,(3β)
5) (M)13,27-cycloursan-3-ol, acetate, (3β,13β,14 β)
6) (R)Lanosta-8,24-dien-3-ol,acetate,(3β)

Table 1. Results of the antibacterial activity of the triterpenes mixture of *C. incisa* leaves

Tested Strains	**MIC(µg/mL)**
Methicillin- resistant *Staphylococcus aureus*	>200
Linezolid- resistant *Staphylococcus epidermidis*	>200
Vancomycin – resistant *Enterococcus faecium*,	200
Acinetobacter baumannii resistant to carbapenems	200
Escherichia coli producing extended-spectrum beta lactamase	>200
Pseudomona aeruginosa resistant to carbapenems,	200
Klebsiella pneumoniae NDM-1+ resistant to carbapenems and broad-spectrum cephalosporins	>200
Klebsiella pneumoniae producing extended-spectrum beta lactamase	>200
Klebsiella pneumoniae resistant to oxacillins	200

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