

CAMEROONIAN MEDICINAL PLANTS AS SOURCE OF BIOACTIVE NATURAL COMPOUNDS

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CAMEROONIAN MEDICINAL PLANTS AS SOURCE OF BIOACTIVE NATURAL COMPOUNDS

Objective

Search for new biologically active compounds from natural sources which can be candidates for drug discovery.

Biological activities

- **Antimicrobial**
- **Antiinflammatory**

Natural Products In Drug Discovery

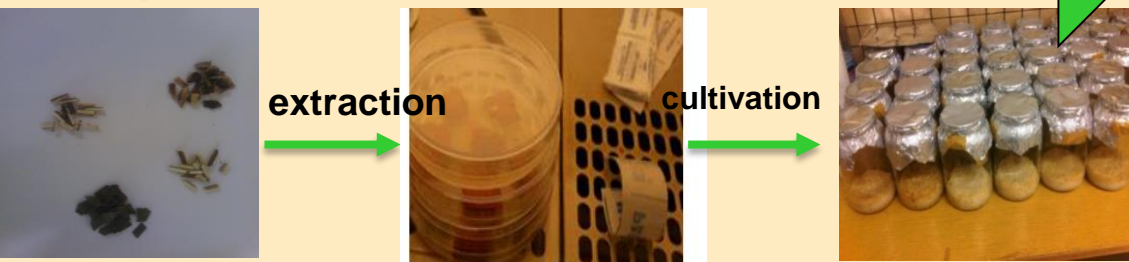


STRATEGY

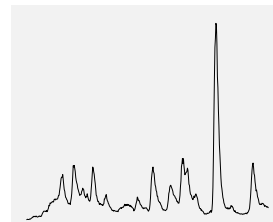
Plant route



Endophytic fungi route



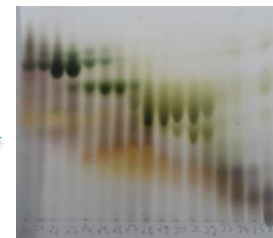
filtration



LC-MS

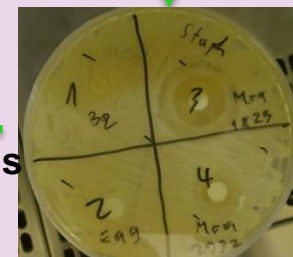


Extraction and filtration



TLC

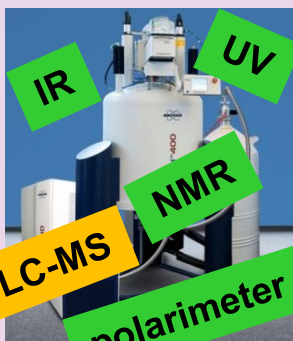
Bioassays
(antiparasitic and antimicrobial, ... testing)



Bioassays

analysis

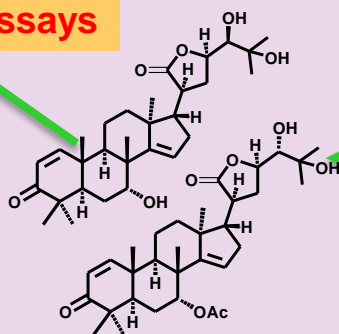
Structure elucidation



Compound purifications

HPLC

Bioassays



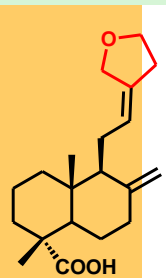
Turreanthus africanus

- **Sampling location: Kala Mountain-Yaounde-Cameroon**
- **Name: *Turreanthus africanus***
- **Family: Meliaceae**
- **Traditional use:**
 - ✓ - as an anthelmintic
 - ✓ - for poisoning fish and its oil is used in folk medicine as an abortive

Literature

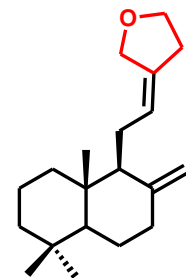
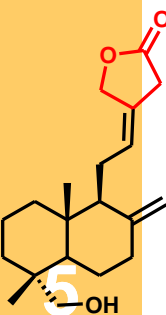
- Tayman, et al. Chem. Nat. Comp. 42, 2006, 46–48.
- Vardamides et al. Planta Med. 73, 2007, 491–495.

Isolated compounds

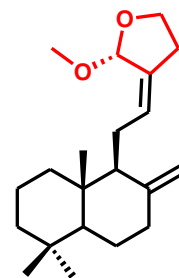


turaeanin F

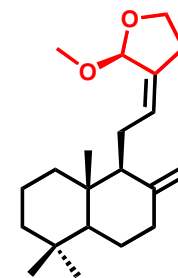
Antimicrobial compound



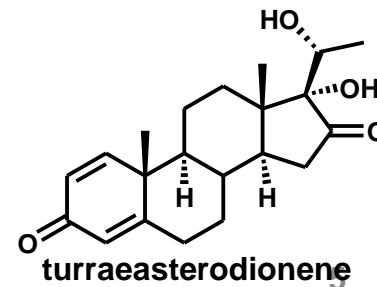
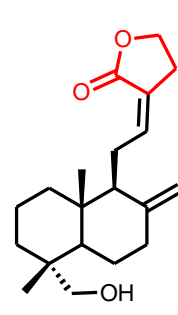
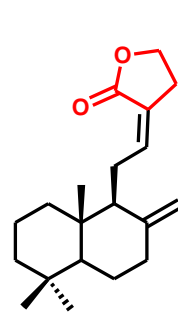
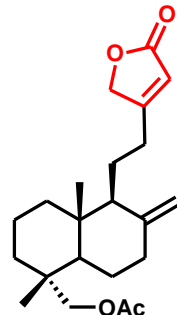
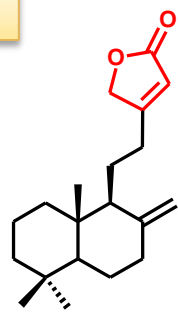
turaeanin K



epi-turaeanin K



turaeanin I



turaeasterodionene

Harungana madagascariensis

Sampling location: Mount Kalla, Yaounde-Cameroon

Species: *Harungana madagascariensis*

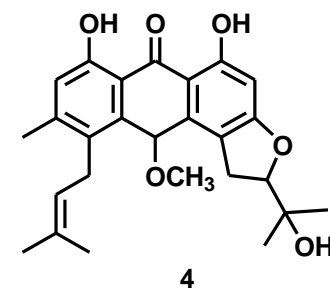
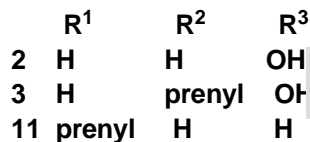
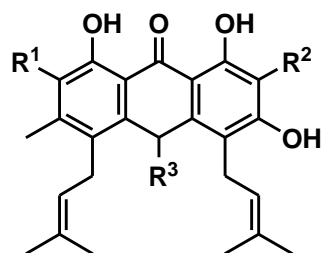
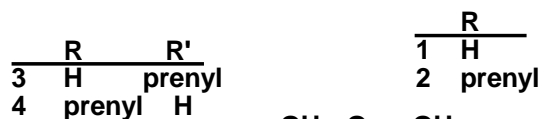
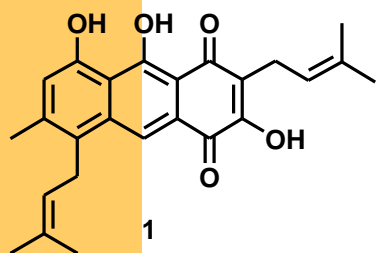
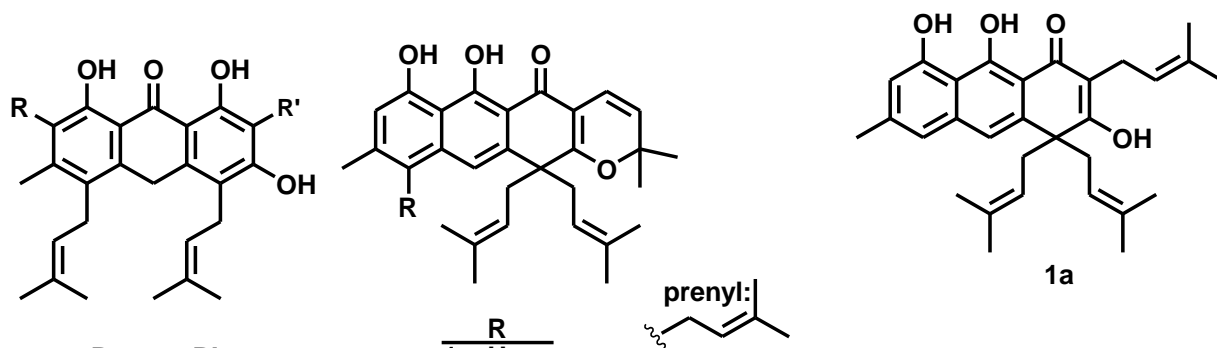
Family: Hypericaceae

Medical indication: livestock diseases, skin diseases and haemorrhage

Local name: "elepo"



Isolated prenylated anthracene derivatives

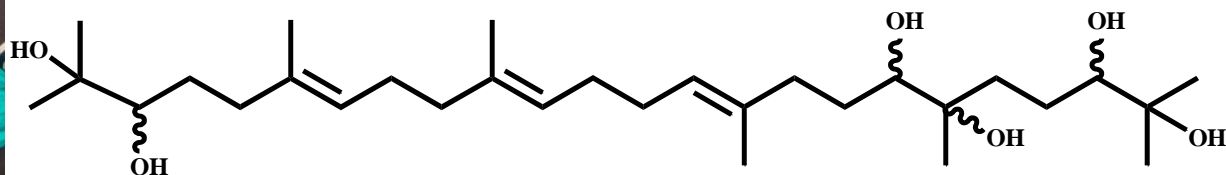


Anti-microbial compounds

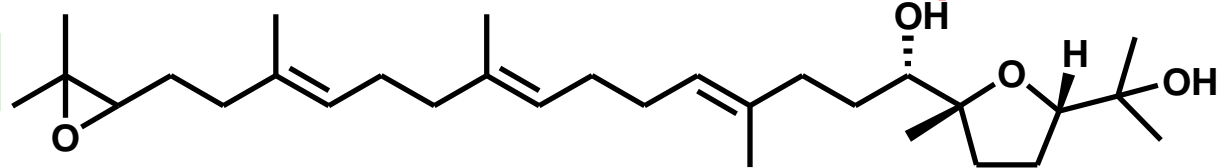
Entandrophragma cylindricum



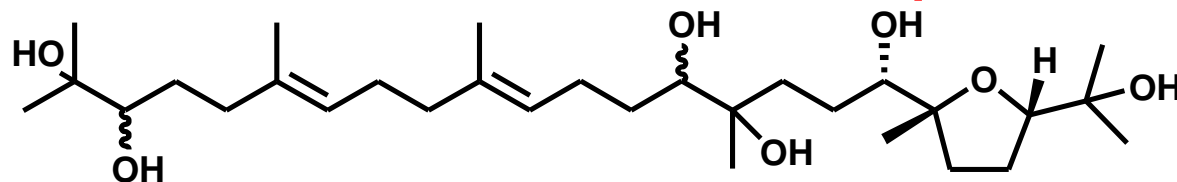
- **Sampling location: Kala Mountain-Yaounde-Cameroon**
- **Name: *Entandrophragma cylindricum***
- **Family: Meliaceae**
- **Traditional use:**
 - ✓ - Rheumatism



Sapelenin G



Sapelenin H



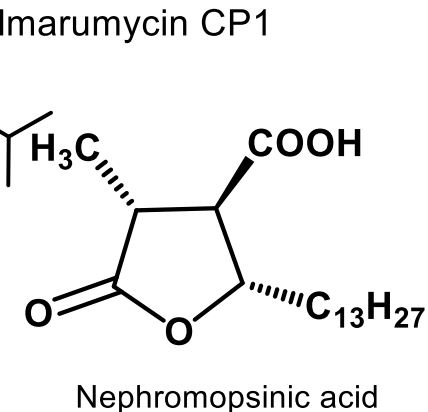
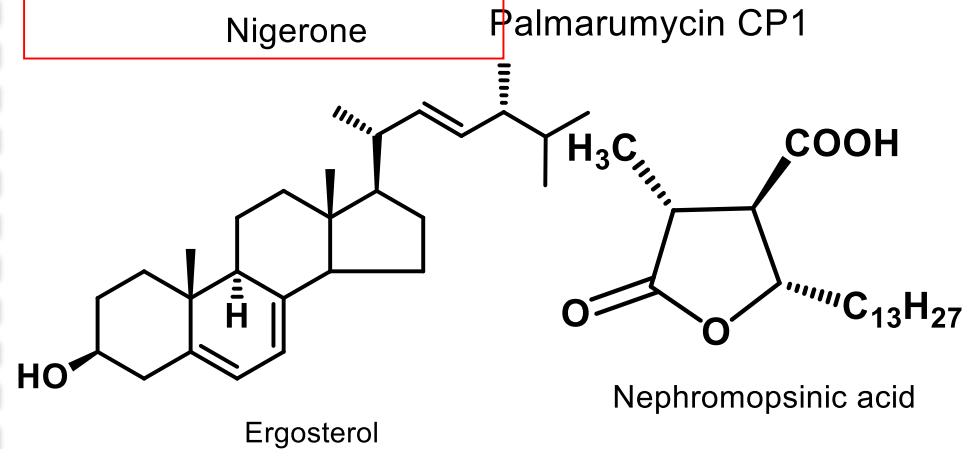
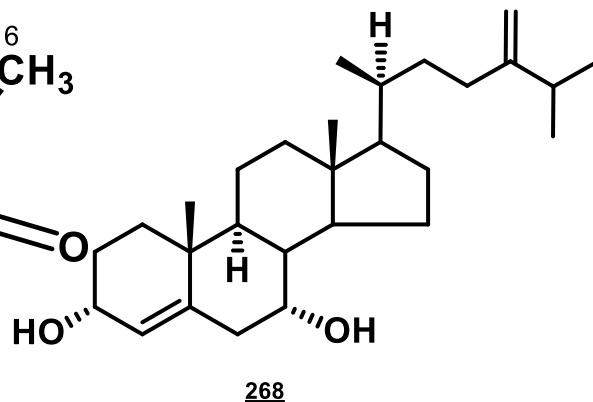
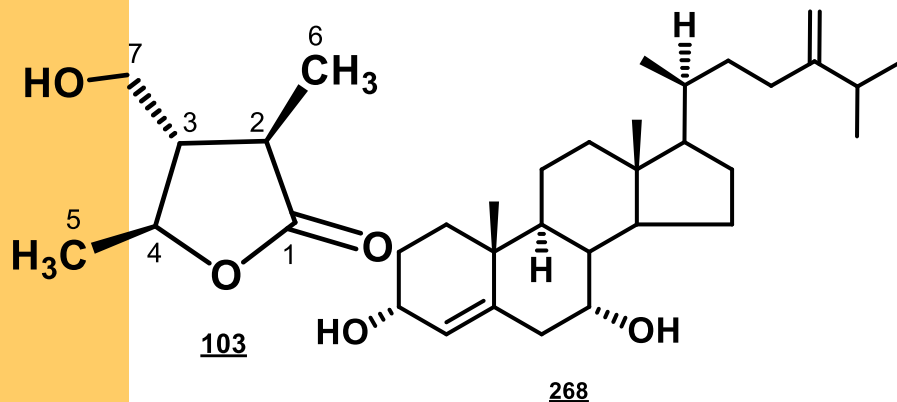
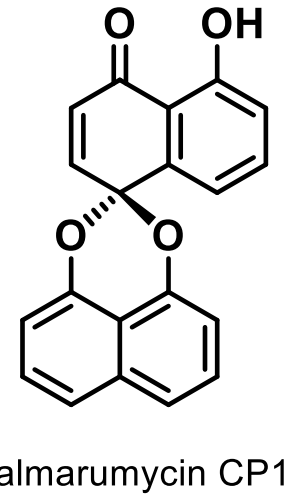
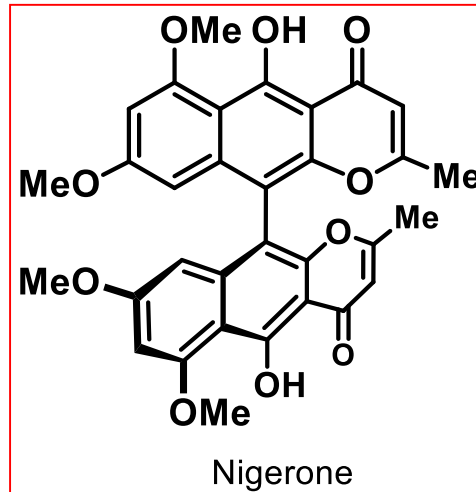
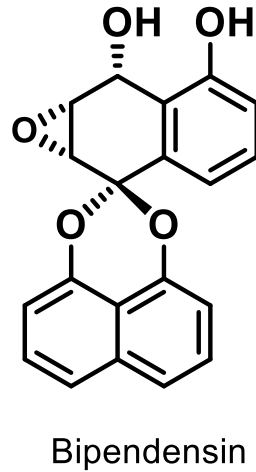
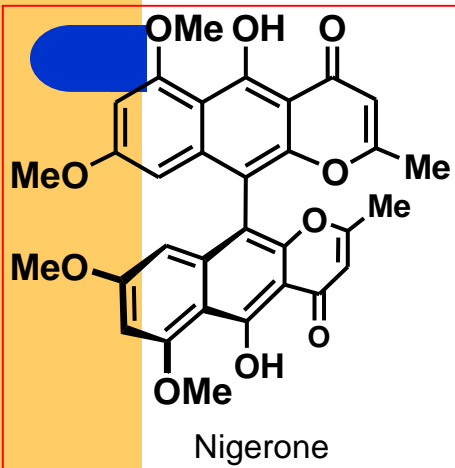
Sapelenin I

Anti-inflammatory compounds

An Approach of metabolic partnership between the host plant and its associated endophytic fungi

compounds isolated from plant

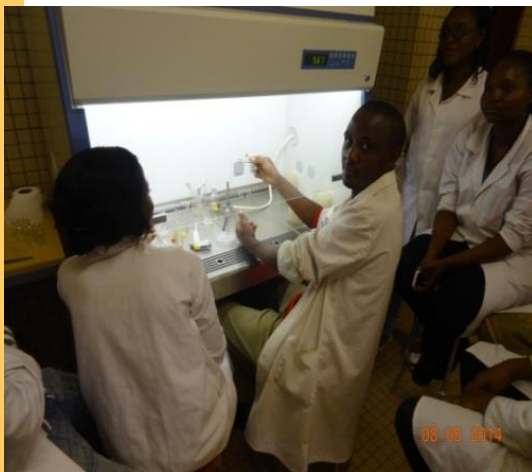
compounds isolated from endophytes



Conclusion



- ❖ **Cameroonian medicinal Plants have several class of compounds with structure diversity**
- ❖ **These compounds showed variety of biological activities: antimicrobial, antiinflammatory, antiplasmodial and cytotoxicity.**
- ❖ **Alternative source of bioactive compounds is endophytic fungi which used less quantity of material**





- Funding agencies



**INTERNATIONAL
FOUNDATION FOR
SCIENCE**

2017

Our research group

Thanks

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Pr Maurice Aurélien SOSSOU, Recteur de l'Université de Yaoundé I
Pr Nicolas Gabriel ANDIGA, Directeur de l'ENS de Yaoundé.

