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ABSTRACT BOOK

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FEMS7-3323
Emerging infectious diseases and how to cope with them

INNOVATIVE THERAPY FOR MYCOBACTERIAL DISEASE

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Innovative therapy for mycobacterial diseases

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Tuberculosis (TB) was among the first infectious diseases to be rationally treated and the golden age of TB drug discovery led not only to new antibiotics but also to the development of combination therapy. No new TB drugs had been developed since the 1960s until recently but, in response to the HIV-pandemic and widespread resistance to first- and second-line drugs, a pipeline of candidate TB drugs has been established. Some of these drugs offer potential for the treatment of other mycobacterial diseases such as leprosy, Buruli ulcer and NTM infections. The ATPase inhibitor bedaquiline is especially promising followed by benzothiazinones, highly potent compounds that kill *Mycobacterium tuberculosis* by blocking a critical step in cell wall biosynthesis. The potential impact of these and other new candidate drugs will be discussed.

FEMS7-0972
Biotechnology / Synthetic Biology / Systems Biology - Part II

ANTIMICROBIAL EFFECT OF COMPONENTS OF ROOT EXTRACT OBTAINED FROM VEXIBIA ALOPECUROIDES

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Backgrounds

An actual problem of modern medicine and pharmacology is not only the chemical synthesis of antimicrobial agents, but also the search for new sources of natural antibiotics, including plant origin. Antimicrobial activity of plants, extracts isolated from them and individual components is largely caused by the presence of certain chemical groups belonging to different classes of biologically active substances (BAS).

Objectives

We investigated the antimicrobial properties of the total extract of the roots of plants *Vexibia alopecuroides* and identified BAS causing this activity.

Methods

The total extract was obtained by a two-step maceration fractionated by flash chromatography by appliance Biotage Isoler. Identification of components conducted by high performance liquid chromatography-mass spectrometry and nuclear magnetic resonance, the antimicrobial activity was determined by serial dilutions in broth.

Conclusions

The antimicrobial activity against *Staphylococcus aureus, Methicillin-resistant Staphylococcus aureus, Pseudomonas aeruginosa, Candida glabrata, Candida krusei, Candida albicans* was identified for 9 individual compounds belonging to the group of flavonoids. They are identified as the soforaflavon G, leahianon A, alopekuron A, alopekuron B, alopekuron C, alopekuron F, alopekuron D, soforaflavon I and glabrol. For leahianona A, alopekurona A, B and C, the minimum concentration causing 50% of growth inhibition for *Staphylococcus aureus*, methicillin-resistant *Staphylococcus aureus* was <0.8 μg / ml, which is comparable to the minimum concentration of antibiotic Ciprofloxacin, triggering a similar effect.