Mixture of plant secondary metabolite derivative and plant extracts with antimicrobial activity against microorganisms involved in dental caries development

Summary

Profile type	Company's country	POD reference
Technology offer	**Czechia**	**TOCZ20230208016**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Commercial agreement with technical assistance**	**• World**
Contact Person	**Term of validity**	**Last update**
Christine DEMIZIEUX	**8 Feb 2023** **8 Feb 2024**	**8 Feb 2023**

General Information

Short summary

Palacky University has developed new mixture of plant secondary metabolite derivative and plant extracts with antimicrobial activity against S.mutans and other microorganisms involved in dental caries development.
The plant secondary metabolite belongs to group of phenyl propanoids and is mixed with plant extract. There is proved synergic effect of both these components. The mixture has a preservative effect so the product (eg toothpaste) does not require additional stabilizers or preservatives.

Full description

The technology is designed for used for treatment of periodontal disease and preventing tooth decay, for removing, killing, or inhibiting the growth of pathogens causing periodontal disease and tooth decay. Antibacterial activity has been proved against S. mutans, S. mitis, A. odontolyticus and other microorganisms involved in tooth decay development. Moreover, the mixture proved significant synergic effect compared to single use of extracts only. The mixture has a preservative effect so the product (e.g. toothpaste) does not require additional stabilizers or preservatives.

In frame of proof-of-concept stage (successfully passed) the following tests of the mixture has been performed in

model toothpaste and mouthwash:

• Solubility optimization in toothpaste and mouthwash
• Test of preservative properties
• Cytotoxicity test – mouthwash is not toxic for tissue culture cells up to highest tested concentration 2500 µg/ml and toothpaste up to 1000 µg/ml. Both tested samples proved low cytotoxicity
• in-vitro skin irritation test – not skin irritating (the applied concentration was several times higher than concentration expected for commercial use
• scale-up from laboratory to larger scale
• optimization of the compound and the extract
• Senzoric tests (performed by certified staff)
• antimicrobial activity verified in toothpaste and mouthwash

Type of deal is sought: We look for commercial partner for mutual cooperation or material transfer agreement (MTA) and later license agreement

Advantages and innovations

The combination of both ingrediencies significantly improves the microbial activity compared to single use of extracts only.

Technical specification or expertise sought

Stage of development

Available for demonstration

Sustainable Development goals

• Goal 12: Responsible Consumption and Production

IPR Status

IPR applied but not yet granted

Partner Sought

Expected role of the partner

We look for commercial partner for mutual cooperation or material transfer agreement (MTA) and later license agreement

Type of partnership

Commercial agreement with technical assistance

Type and size of the partner

- **SME 11-49**
- **SME <=10**
- **SME 50 - 249**
- **Big company**

Dissemination

Technology keywords

- **06001018 - Virus, Virology/Antibiotics/Bacteriology**

Market keywords

- **07003002 - Health food**
- **07004002 - Health and beauty aids**

Targeted countries

- **World**

Sector groups involved