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Informations et organisation :

Université libre de Bruxelles – Faculté de Pharmacie
RD3 - Unité de Pharmacognosie, Bioanalyse et Médicaments
Boulevard du Triomphe, Campus de la Plaine, Bâtiment B, 1050 Bruxelles
Tél : 02 650 5172 – E-mail : caroline.stevigny@ulb.be

INFORMATIONS PRATIQUES

Accès Wifi

LOGIN et PASSWORD se trouvent au verso de votre badge

Comité scientifique

Flore Keymeulen (flore.keymeulen@ulb.be)

Hélène Mavar (helene.mavar@ulb.ac.be)

Caroline Stévigny (caroline.stevigny@ulb.be)

Vitalija Povilaityte (vitalija.povilaityte@ulb.be)

Comité organisationnel

Céline Duchateau (celine.duchateau@ulb.be)

Dominique Mertens (dominique.mertens@ulb.be)

Andrea Montis (andrea.montis@ulb.be)

Sofia Oliveira (sofia.marilia.oliveira.ribeiro@ulb.be)

Sébastien Sinaeve (sebastien.sinaeve@ulb.be)

Olivier Vaillant (olivier.vaillant@ulb.be)

P-19 : Unveiling cocoa bean shell antimicrobial activity

Cèlia Antón Sales[1], Olga Rojo Poveda[1,2], Sofia Oliveira Ribeiro[1], Veronique Fontaine[3], Flore Keymeulen[1], Jérémie Ngezahayo[1], Guiseppe Zeppa[2], Caroline Stévigny[1]

[1] Pharmacognosy, Bioanalysis and Drug Discovery Unit, Campus Plaine, Boulevard du Triomphe, 1000 Bruxelles, Belgium

[2] Department of Agriculture,Forest and Food Sciences (DISAFA), University of Turin, Grugliasco,Italy.

[3] Microbiology, Bioorganic and Macromolecular Chemistry Unit, Campus Plaine, Boulevard du Triomphe, 1050 Bruxelles, Belgium

Cocoa bean shell (CBS) is a by-product of the cocoa manufacturing process, it represents around 12% of the total bean weight, and it is normally discarded after the husking and grinding process of the cocoa beans.

CBS is an important source of dietary fiber and polyphenols, besides, its organoleptic properties are very similar to those of cocoa powder (Okiyama et al., 2017). Hence, its interesting composition has positioned CBS in the scope of multiple studies, in order to recycle this by-product and introduce it again to the value chain. The CBS' polyphenolic compounds and their antimicrobial activity have not been deeply investigated, although it is largely known that polyphenols are an important group of antioxidants displaying multiple functions in plant physiology such as defense against biotic and abiotic stresses (Daglia, 2012).

Therefore, the present study aims to unveil the antimicrobial activity of CBS against various bacterial and fungal strains, focusing on the potential antimicrobial activity that polyphenols comprised in CBS may have. Water-ethanol extractions of CBS were performed, High Performance Thin Layer Chromatography (HPTLC) assays were used to evaluate the extracts composition and Minimum Inhibitory Concentration (MIC) tests were developed in order to study the biological response to CBS extracts. Promising results were obtained with *Streptococcus mutans*, a major caries contributor, when treated with CBS extracts.

In conclusion, this study points forward new perspectives in cavities treatment with CBS and further investigation will be done in order to develop new products in the field of food technology.

Keywords : Cocoa bean shell, *Theobroma Cacao*, Antimicrobial activity, *Streptococcus mutans*

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