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Innovative bioguided fractionation of cranberry juice for *Candida* biofilm treatment and infected-wound healing.

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Cranberry polyphenols are intensively studied for their anti-infectious and antioxidant properties. Nevertheless, in biofilm and infected-wound healing, the identity of active polyphenols still remains unclear. In order to identify active polyphenols, an innovative fractionation scheme based on Centrifugal Partition Chromatography (CPC) was developed. CPC is a support free liquid/liquid chromatographic technology used here for the first time to fractionate cranberry juice. The fractionation protocol involved 3 mains steps: firstly polyphenol and sugars separation; then polyphenols fractionation based of molecular weight and polarity, and finally CPC or on LH-20 resin.

Following the second step, the 6 main fractions obtained were screened on *Candida* biofilm and toward infected wound. Fractions containing low molecular weight proanthocyanidins (Fr III and IV) and containing high molecular weight PAC (Fr V ad VI) exhibited the most interesting activities. Concerning *Candida albicans* biofilm a prophylactic effect was observed by prevention of adhesion. On infected wound, a wound-healing potential related to anti-inflammatory effect but not to antibacterial activity against *Staphylococcus aureus* was highlighted.

These four active fractions were further purified using either CPC or LH-20 resin, to lead to almost 40 sub-fractions. Again fractions containing PACs of medium and high molecular weight exhibited the highest activity against adhesion step of *C. albicans* strains and infected wound healing.

This work is a step further to understand mechanisms of action of cranberry polyphenols on *C. albicans* biofilm prevention and in infected wound healing.

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Chemical fingerprints and biochemical activities of edible congoese hibiscus leaves

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Hibiscus acetosella, *Hibiscus cannabinus* and *Hibiscus sabdariffa* leaves are widely consumed as vegetables in the form of sauces by Congolese people (Democratic Republic of Congo).

The aim of this study was to compare the chemical fingerprints and the correlations between anti-inflammatory (myeloperoxidase (MPO) activity) and antioxidant properties of polar and non polar extracts of these plants. Antioxidant properties were evaluated by using 2',7'-dichlorofluorescein-diacetate (DCFH-DA) and lucigenin on neutrophils and HL-60 cells. Chemical fingerprints were performed by Thin Layer Chromatography and High Performance Liquid Chromatography.

Chemical fingerprintings revealed that *H. acetosella* has a fingerprint different to *H. cannabinus* and *H. sabdariffa* that have the same fingerprint. Major compounds are phenolic acids represented by caffeoxyhydroxicitic acid for *H. acetosella* and neochlorogenic acid for the others. All extracts displayed high ABTS and DPPH radical-scavenging activities at the concentration range of 10 – 80 µg mL⁻¹ and antioxidant activity assays at 0.05 – 10 µg mL⁻¹, according to the following order: *H.acetosella* > *H.cannabinus* > *H.sabdariffa*. Non polar extracts exhibited a strongest superoxide



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