

Corporate Innovation Challenge Template

Challenge Name: Papain stabilization against oxidation
Code Name: BIOECONOMYVENTURES-2022-OC2-Natix_1
Challenge Domain: <ul style="list-style-type: none"> Bio-based Fragrances, Cosmetics and Personal & Home Care
Description of the Corporate innovation Challenge
<p>Natix is a company specialised in the production of natural extracts such as essential oil and enzymes using different plant- and animal-sources. Papain, extracted from the fruit of the Carica papaya fruit, is the most important enzyme industrially refined by Enzybel.</p> <p>It has been reported that oxidation of the active site (thiol group) can lead to inactivation of papain which can be reversed to some extent by thiol reagents like cysteine or sodium metabisulfite. Thiol group oxidization can present three oxidation levels and only the first one is reversible.</p> <p>Sodium metabisulfite is a sulphur compound, used as anti-microbial and anti-oxidizing agent that can be used in papain production process, but it is a well-known allergen compound, and its concentration has to be limited in the end product (maximum concentration in papain powder (expressed in SO₂) is 10,000 mg/kg (ppm) or 1% (w/w).</p> <p>Natix is looking for novel processes for Papain stabilization against oxidation. Natix' challenge is to find a natural technological aid (anti-oxidizing and anti-microbial) that is not toxic for human consumption.</p>
Expected results
<ul style="list-style-type: none"> Better market penetration with a product without sulfite To optimize production process and having less oxidation (loss of papain enzymatic activity) Natural solution

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Types of Collaboration

1. Pilot running and product testing
2. R&D opportunity
3. Mentorship

Participation confirmation

I confirm Natix S.A. availability and participation in the BioeconomyVentures programme. This confirmation allows BioeconomyVentures the right to publicly disclose the company's name, challenge information, logo and website for the purpose of dissemination and attracting new innovators to the programme.

Company Information

Company Name: Natix S.A.

Challenge owner name and last name: Gilles Vanderstocken

Challenge owner email: gvs@enzybel.com

Company information:

Natix S.A is an international bio-tech company with the ambition to become the leading plant-based enzymes provider for environmentally friendly food-related products. Natix brings together a group of companies with a common vision: *To improve human well living by creating effective & innovative solutions, valorising what nature offers and contributing to a more sustainable world.* Natix is the legal structure for all natural extracts and enzyme-related activities and is called "commercially" Enzybel. Enzybel comprises several legal entities and subsidiaries active in enzymes. The subsidiaries active in plant-derived enzymes are Enzybel International which is located in Villers-le-Bouillet (Belgium) and EnzymCo located in Madurai (India), they both produce papain; Bromelain Enzyme which is located in Lampung (Indonesia) and produces bromelain. Enzybel is developing different enzymes using different plant- and animal-sources for decades. Currently, Enzybel is operating internationally in a wide range of sectors including food and beverages, feed and pet food, pharma and technical and nutraceuticals.

Natix is well progressing and continues to develop, recording a turnover of €22.905 M in 2018, €24.072 M in 2019, 23.846 M in 2020.

Enzybel has currently an ongoing Eurostars funding (Plant2Go – 2010210). Enzybel also secured an Innoviris grant (Doctiris) in 2019 (ProGiC)

Contact:

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