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PROMISEANG

Alternative PROteins from MIcrobial fermentation of non-conventional SEA sources for Next-Generation food, feed and non-food bio-based applications

D8.10

Exploitation Plan v1.1

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TABLE OF CONTENTS

TABLE OF CONTENTS 1
PROJECT INFORMATION 2
DELIVERABLE DETAILS 3
1. EXECUTIVE SUMMARY 4
2. INTRODUCTION 4
3. IPR MANAGEMENT 4
4. OPEN SCIENCE PRACTICES 6
4.1 OPEN ACCESS TO SCIENTIFIC PRODUCTION OF UNIVERSIDADE DE VIGO 7
4.2 MANAGEMENT OF CLASSIFIED INFORMATION AT UNIVERSIDADE DE VIGO 7
5. EXPLOITATION STRATEGIES 8
6. MARKET ANALYSIS & BENCHMARKING 9
6.1 ALTERNATIVE PROTEIN MARKET 9
6.1.1 ALTERNATIVE FOODS TO DAIRY, MEAT AND SEAFOOD PRODUCTS 9
6.2 FOOD MARKET 10
6.2.1 HIGH-PROTEIN FOODS 10
6.2.2 PROTEIN SUPPLEMENTS 10
6.3 FEED MARKET 11
6.3.1 AQUACULTURE FEED 11
6.4 NON-FOOD MARKET 11
6.4.1 PHARMA APPLICATION 11
6.4.2 COSMETIC APPLICATIONS (HYDROGEL) 12
7. TECHNOLOGY TRANSFER PLAN 12
8. TECHNOLOGY WATCH 13
9. NEXT STEPS 13

PROJECT INFORMATION

Project full title: Alternative PROteins from MIcrobial fermentation of non-conventional SEA sources for Next-Generation food, feed and non-food bio-based applications

Acronym: PROMISEANG

Call: HORIZON-JU-CBE-2022

Topic: HORIZON-JU-CBE-2022-R-04 - Proteins from alternative and unconventional sources

Start date: 1st September 2023

Duration: 48 months

List of participants:

Number	Name of beneficiary	Acronym of beneficiary	Country
1	UNIVERSIDAD DE VIGO	UVIGO	ES
2	IST-ID ASSOCIACAO DO INSTITUTO SUPERIOR TECNICO PARA A INVESTIGACAO E O DESENVOLVIMENTO	IST-ID	PT
3	MOA BIOTECH SL	MOA	ES
4	INSTYTUT BIOTECHNOLOGII PRZEMYSLU ROLNO-SPOZYWCZEGO IM PROF WACLAWA DABROWSKIEGO - PANSTWOWY INSTYTUT BADAWCZY	IBPRS	PL
5	CONTACTICA SL	CTA	ES
6	CENTIV GMBH	CENTIV	DE
7	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	CSIC	ES
8	BIOZOON GMBH	BZN	DE
9	LABORATORIO IBERICO INTERNACIONAL DE NANOTECNOLOGIA LIN	INL	PT
10	CONSERVAS RIANXEIRA SA	JEALSA	ES

DELIVERABLE DETAILS

Document Number:	D8.10
Document Title:	Exploitation Plan v1
Dissemination level	PU – Public
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WP:	WP8
Task:	Task 8.4
Author:	Universidade de Vigo Universidade Vigo
Abstract:	Initial Exploitation Plan. Update of the exploitation plan from the one submitted in the proposal phase.

Date	Description	Version of the document
23/02/2024	Draft deliverable	1.0
27/02/2024	Second draft	1.1
29/02/2024	Final deliverable	2.0

1. EXECUTIVE SUMMARY

This deliverable aims to present the approach and the methodology adopted for the exploitation plan; to provide preliminary market and competitive environment assessment together with first inputs on the roadmap for exploitation.

It is worth to be noted that all the presented findings are still preliminary. These will be further updated in final version of the Exploitation Plan.

2. INTRODUCTION

The exploitation plan will determine the economic, scientific, societal performance exploitation routes to turn PROMISEANG activities into concrete value and impact for society and the required steps for the successful implementation of the identified business models.

This plan will include:

- IPR Management
- Open science practices
- Exploitation strategies
- Market analysis & benchmarking
- Technology watch

3. IPR MANAGEMENT

The intellectual property management strategy (document versioning, approval and release) will be performed following the IAPED methodology (Identify–Assess–Protect–Exploit-Disseminate, Figure 1), as explained below:

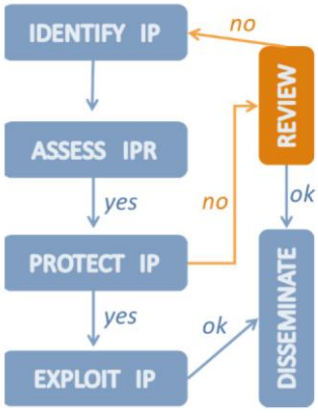


Figure 1 AIPED procedure followed in PROMISEANG

1. **Identification of Intellectual Property (IP):** at proposal stage, the foreground interests of the consortium members have been established in Table 1. Access rights to background IP will be granted royalty-free by the owner partner during the project execution.
2. **Assessment of Intellectual Property Rights (IPR):** As a general rule, each partner will have the rights of IP on the knowledge generated by them during the project, and on the respective developed

processes and products.

In the case that an invention was made jointly by two or more partners, the foreground IP will be jointly owned if IP cannot be split. A detailed Consortium Agreement (CA) using the DESCA 2020 model contract (www.desca-2020.eu) will be signed by all partners at the start of the project, including the description of how IPR will be handled.

Any third party involved in the project (i.e., the external advisory board) will sign a Non-Disclosure Agreement (NDA) with PROMISEANG coordinator to prevent any result or technology be unauthorizedly disclosed.

3. **Protection of IP:** An assessment of the key sensitive data to be protected for each potential exploitable result was preliminary conducted in Table 1 and will be worked up in Task 8.4.

   The innovative PROMISEANG bioprocesses will be assessed for patentability the project coord. (UVIGO), who will recruit services of a European Patent Attorney and legal advice (e.g., SILEX), and oversee negotiating license agreements to enable the transference of project´s results outside the consortium for exploitation purposes.

4. **Exploitation**: Once protected, the results of the project can be exploited. Scientific knowledge will be licensed under CC BY and CC BY-NC/ND and freely available to society by publishing in open-access journals.

   The rest of research outputs and IPR will be exploited as described in the preliminary strategy in Table 1 (and worked up in Task 8.4), including patenting, licensing, technology transfer, etc. or other intangible assets (i.e., brand recognition).

5. **Dissemination**: To increase the impact of PROMISEANG, once the exploitable IP has been protected, the technical/scientific results and the knowledge generated (not compromising that IP) will be transferred and disseminated outside the consortium in an open access.

6. **Review**: IP protection strategy is tentative to get to get modified throughout the whole project process, depending on the confidentiality of the developed product/method.

   PROMISEANG will follow the rules for IPR set out by the EC for the background and foreground management and access rights and traceability and be included in the Consortium Agreement.

   One of the first actions to be taken by the Exploitation Manager (UVIGO) will be to establish a set of guidelines for the project beneficiaries, covering IP management and specifically summarize the rules for handling results before publication, reports and deliverables under review, and the technology transfer procedure.

   All partners have grant access rights to background needed for carrying out their project tasks on a royalty-free basis. In order to monitor any new data affecting the Freedom To Operate (FTO) or interfering with the IP protection strategy, a technology watch system will be applied from the start of the project to the end (Task 8.4).

   As far as the IP is protected with a valid patent, open access will be implemented in its various aspects as detailed in Section 4 Open Science practices.

4. OPEN SCIENCE PRACTICES

The PROMISEANG project will integrate various advanced microbial, biotechnological and biochemical methodologies and will generate a series of scientific-based recommendations which will greatly contribute to knowledge in the sustainable production of alternative protein systems.

To ensure an effective approach to scientific progress to everyone (including stakeholders and the citizenship) for a cooperative work and reduction of the barriers for the implementation of the project's results in society, Open Science's various aspects must be transversally approached.

The following open science practices will be implemented during the project:

- **Research output management**, including research data management. Metadata will be licensed under CC0 or alike, in line with FAIR (Findable, Accessible, Interoperable and Re-usable) principles.
- **Early and open sharing of research** (e.g., pre-prints, registered reports). Pre-prints of the research results will be submitted to open access (OA) repositories (e.g., Bio/Med/Soc/ArXiv) as immediate as possible (no later than the time of publication). Registered reports on Open Research Europe will be considered for the analysis of the marine substrates research line.
- Measures to ensure **reproducibility** of research outputs. SOPs will be created to ensure reproducibility of data collection and processing, in accordance with the EC91. Additional investments in **training researchers** on **integrity**, **basic statistics principles and methods**, and **reproducibility culture** will be applied to ensure reproducibility of data.
- Providing **open access** to research outputs (e.g., publications, data, models, algorithms) through deposition in trusted repositories. PROMISEANG partners will ensure publication of scientific results in OA, thus safeguarding that the publications are FAIR.

  Open access to other PROMISEANG research outputs (workflows, new microbial strains, biospecimens, compounds) will be guided by the principle 'as open as possible, as closed as necessary'. Publications will be licensed under CC BY and CC BY-NC/ND.

  The Author Processing Charges (APCs) are budgeted in the project. A listing of journals with this modality is accessible to the beneficiaries (Directory of Open Access Journals, DOAJ), and a useful listing of repositories for the publication in "green open access" (ROAR, Registry of Open Access Repositories and OpenDOAR, Directory of Open Access Repositories). The Access Infrastructure for Research in Europe (OpenAIRE) has been suggested to select a convenient repository and where partners can contact the National Open Access Desks for further assistance.

  At least 15 scientific publications are expected to be published in OA during the project, and 5 more by 2032. Results will be also shared in the Horizon Results Platform and the European Open Science Cloud (EOSC) to increase visibility and maximize their impact. Other research outputs (i.e., algorithms) will be public if not limited by IP.
- **Participation in open peer-review**. PROMISEANG will take advantage of the Open Research Europe platform: expert reviewers' comments and partner's replies will be publicly available, ensuring transparency of the whole publication process and excellent research quality.
- **Research integrity**: other research integrity measurements seeking to produce research of the highest standard (top-quality reports, open-sharing of results and publication…), will be prioritized.
- **Research ethics**: institutional arrangements are already in place for research (UVIGO, the Research

Ethics Committee, ES) involving animals (CSIC, the CSIC Ethics Committee, ES) and humans (IBPRS, Ethical Committee of Warsaw University, PL. In addition, the external advisor Nébih is itself an ethical committee for research involving humans and animals and will advise if needed.

- **Involving all relevant knowledge actors**, including citizens and end users. IBPRS will study the consumers' acceptance of new food products (Task 6.2) and their feedback will be essential to tune the final food prototypes (Task 6.1); and all partners will participate in the educational material (project brochures, posters, infographics and 3 video-documentaries) and social media posts (Task 8.2).

  Several activities will require the participation of the actors, including an evaluation of the risk perception of the actors by UVIGO (from food waste providers to protein end users, Task 2.4); and all consortium partners will participate in 5 workshops/seminars (Task 8.2) and in the preparation of policy recommendations for governmental bodies and policy makers and best practice guides with replication activities that can be adapted to different stakeholders.

- In the event **of public emergency**, access to confidential research outputs would be arranged under fair and reasonable conditions for both the IP-owning partner and the requesting entities, with the possibility of free license and immediate open access through arrangements with the granting authority.

As the partners responsible for the exploitation plan, one of the objectives of Universidade de Vigo is to deploy a responsible and sustainable action by promoting open access to scientific information.

4.1 OPEN ACCESS TO SCIENTIFIC PRODUCTION OF UNIVERSIDADE DE VIGO

In 2018, UVigo signed the Declaration fo Berlin, committing itself to the Open Access movement. The University promotes, through the instruments at its disposal, a free and open access to scientific knowledge produced by its researchers. To this end, the institutional repository INVESTIGO has been created for the deposit of scientific production. This repository is aimed at disseminating, managing and preserving the scientific production of its research staff.

On the other hand, and in this line of promoting open access, the university intends to develop its internal processes for the evaluation of scientific production. It will be based on the publications deposited in its institutional repository (articles or research works published, in magazines, books and parts of books, doctoral theses and publications derived from congresses). The publications must be referenced in the repository and facilitate the access to their full text, taking into account the limitations established by their editors.

4.2 MANAGEMENT OF CLASSIFIED INFORMATION AT UNIVERSIDADE DE VIGO

In order to be able to handle information identified as "classified" by the convening entities (European Union, ESA, NATO ...), and thus not lose any opportunity to participate in R&D projects, Universidade de Vigo launched the creation of a structure for the protection of information classified as "limited dissemination or equivalent".

To do this, the Universi contacted the authorities of the National Security Office, who facilitate them the necessary training to their interested researchers, come to visit their university and review their facilities, as well as inform them, in situ, of the procedures for the setup of said structure.

Consequently, the university made an official request for the creation of an Administrative Protection Zone and communicated the appointment of a security chief and a substitute, which was formalized through respective internal resolutions approved by the decision-making bodies of the university.

Likewise, an information and communications system (CIS) is being accredited, which would be equipped in the Administrative Protection Zone.

5. EXPLOITATION STRATEGIES

Every participant involved in PROMISEANG consortium has particular exploitation interests in the project results. **A preliminary strategy** for the exploitation of these results, including the routes for exploitation of long-term interest, is listed in Table 1. A more detailed plan will be developed during the project (WP8) to maximise the impact of PROMIESANG.

Table 1 Identification of exploitation and protection strategy for PROMISEANG results. IP: Intellectual Property. NDA: Non-Disclosure Agreement

	BACKGROUND IN USE	EXPLOITABLE RESULT	EXPLOITATION STRATEGY	IP PROTECTION
UMGO	Experts in Nutrition & Food Tech. (AA1 group)	New **standards & procedures** for **marine food nutritional profiles**	Scientific publications	Copyright
			Future joint research; PhD training	NDA
	Experts in solid-state fermentation & biocompound extraction (BIA group)	Know-how on **scale-up of SSF** & **green extraction procedures**	Scientific publications; Replication activities; further research	Copyright
		New **sustainable protein-rich ingredient** (biomass extract)	Patenting/ Spin-off creation for the sale of the new products	Patent/Trademark
	Experts in technology transfer, networking & market study (OE7 group	Know-how on **alternative proteins markets** and **future** uses in food/feed/non-food	Scientific publication	Copyright
			Technology transfer, networking & future joint research	Copyright; NDA
IST	Expert in protein recovery & biosynthesis and purification of PHA	New knowledge on **green protein extraction** and on **sustainable PHA bioproduction**	Scientific publication	Copyright
			Further internal/joint research; replication activities;	NDA; Copyright
MOA	Expert in pre-treatments, SLF and SCP production for food applications	Know-how on **optimization and scale-up for SLF**	Scientific publication; Replication activities; further research	Copyright; Industrial Secret
		New protein products & further use in **food, feed and non-food**	Patenting (& licensing) and/or new business line	Patent, Trademark or Industrial Secret
IBPRS	Expert in microbiology, food safety evaluation , food formulation and sensory assays	Know-how on the **safety of new marine by-products** and new knowledge on **consumers acceptance of new foods**	Scientific publications	Copyright
			Further internal research, networking & replication activities (sensory assays in other counties)	NDA
CTA	Expert in LCA and LCC assessments.	Know-now on **LCA** on **multiple fermentation scenarios**	Replication activities (LCA/LCC services for other companies)	Trade secret
UVMB	Expertise in risk assessment and EU legal issues on food/feed	New knowledge on **legal aspects of alternative proteins** and on **risk perception of stakeholders**	Replication activities (surveys in other countries) & joint research	NDA
			scientific publications	Copyright
CENT	Expert in designing high-protein sport drinks	**New instant powder beverage formulations**	Further internal/joint research	Industrial secret
			Scientific publications	Copyright
CSIC	Expertise in microbial design & analysis for bioprocesses	**microbial consortia** models	Patent, free licensing	Patent
		New data for **BioCAD methods for industrial biotech**	Scientific Publications	Copyright
			Further internal/joint research	NDA
BZN	Expert in producing high-protein powder foods	**New instant powder food formulations**	Further internal/ joint research & new business line /product	Trademark or Industrial Secret
			Scientific publications	Copyright
INL	Expert in nanotechnology formulations and cosmetics development	Novel **biocompatible and biodegradable formulations** for biomedicine and cosmetics	Patenting & licensing / Spin-off	Patent/trademark
			Scientific Publications	Copyright
			Replication activities and research	NDA
JEALSA	Expertise in canning seafood products	Know-how on **circularization of seafood biowaste & by-products**	Replication activities, further internal/collaborative research	NDA
		New seafood-like foods	New business line	Industrial design right
	Expertise in producing feed for pets	**New feed for pets** (cat, dog)	New product line	Trademark or Industrial design right
		New feed for fish	New business line	

As part of the exploitation plan, market study and business models will be created during the project execution.

Nonetheless, an initial market study is presented in Section 6 to see the fit of forthcoming PROMISEANG

outcomes (and updated during the project, WP2).

As part of CBE efforts to ensure the maximum impacts after finalization **of the project, a follow up plan will be detailed in the exploitation report to ensure enough resources for the monitoring of the impacts and feedback measures in the subsequent years.**

6. MARKET ANALYSIS & BENCHMARKING

An initial market study is presented here to see the fit of forthcoming PROMISEANG outcomes (and it will be updated in WP2). An outlook of the PROMISEANG primary products (ingredients) is presented in Table 2, showing a dramatic market growth for some of them, such as chitosan and alternative proteins.

Table 2 Outlook of market trends to PROMISEANG ingredients

MARKET	SIZE ($ billion)	CAGR (%)
Alternative proteins	**73.44** (2022)	**21%** (2022-2032)
Chitosan	7 (2021)	**25%** (2021-2030)
Chitin	1.5 (2021)	12.7% (2021-2027)
Lipids	**9.7** (2022)	8.7% (2022-2032)
Carrageenan	0.78 (2020)	6% (2020-2028)
Polyphenols	1.6 (2021)	7.4% (2022-2030)
PHA	**48.05** (2021)	6.40% (2021-2028)

6.1 ALTERNATIVE PROTEIN MARKET

In 2019, the alternative protein market was s $2.2 billion, small compared with the $1.7 trillion global meat market. However, the global alternative protein market multiplied over 30 times in just 3 years, garnering a market value of $73.4 billion in 2022, and estimated a compound annual growth rate (CAGR) of 21% in the forecast decade. A review of alternative protein prices is given in Table 3, being the fermentation-based protein in the low-price range.

Table 3 Comparison of traditional (whey) vs. alternative proteins in the market.

PROTEIN SOURCE	SAFETY	PROTEIN DIGESTIBILITY	SENSORY CHARACTERISTICS	ENVIRONMENTAL IMPACT	MARKET	PRICE ($/kg)
WHEY	Potential allergies	100%	Good taste, excellent beverage & applications	Low-Medium	>100 years	7.5
SOY	Potential allergies estrogenic effects	93%	Good taste, versatile applications	Low-Medium	>10 years	2.0
PEA	Non-GMO, non-allergenic	72%	Slight beany taste	Low	>10 years	5.0
INSECT	Potential allergies, requires EFSA approval	73%	Unfamiliar taste, texture and aroma	Low	>5 years	41.0
CULTURED MEAT	Potential allergies, complex tech, needs EFSA approval	92%	Needs fat cell inclusion & texture development	High	Not available	300
FUNGAL FERMENTATION	Potential allergies, requires EFSA approval	100%	umami taste, good texture	Low-Medium	>5 years	13.0

6.1.1 ALTERNATIVE FOODS TO DAIRY, MEAT AND SEAFOOD PRODUCTS

Description: Foods that comprises protein without animal precedence, which are included in plant protein, alga protein, mycoprotein and insect protein).

Value: €3.4 B (world)

CAGR: + 6.65% (world), + 6.4% (only the plant and alga protein data from Europe).

Market drivers: COVID-19 (avoid livestock animals and zoonotic viral infections), new habits and diets (e.g., flexitarian, vegan, vegetarian, etc.), benefits of a vegan diet.

Market barriers: although plant-based protein is very common, the other alternatives are more cultural; the taste is one of the challenges to deal with; production costs still are high; allergies associated to this kind of food can be a hamper.

6.2 FOOD MARKET

The fresh and processed food market keeps increasing with a growing population, presenting a worldwide revenue of $8.05 trillion in 2021 and expected a 3.14% (CAGR 2021-2025).

Interestingly, the sustainable aquaculture market in EU is expected a 20.1% increase (CAGR 2022-2027).

The largest manufacturing sector in the EU is the food and drink industry. Food production has 4.25 million workers, the 6.7% of total EU14 employment.

The global high protein-based food market is expected to be $70 billion in 2024 (7% CAGR 2019-2024), while the high-protein drink market was $21.45 billion (2021) and expected an 8.6% growth (CAGR 2022-2029).

The dairy-alternatives market was $25.2 billion in 2021 and rising at 11.8% (CAGR 2022- 2030), while the alternative to seafood will reach $1.6 billion at a CAGR of 28% (by 2031).

6.2.1 HIGH-PROTEIN FOODS

Description: The high-protein food includes Protein-rich packaging foods, protein-rich drinks, high-protein and high-energy sports drinks, high-protein, and nutritious sports drinks.

Value: €91.1 B (world)

CAGR: 7% (world)

Market drivers: Consumer preferences shifting between synthetic ingredients to natural, preferences on herbal products, increasing demand in high-protein foods in due to new healthy habits.

Market barriers: Strongly regulated market; regulation on labelling, manufacturing, and marketing; difficult internationalization (e.g., there are ingredients banned in the EU that are allowed in the US and vice versa).

6.2.2 PROTEIN SUPPLEMENTS

Description: This market includes protein powder, ready-to-drink beverages and protein bars and it can be segmented depending on type (e.g., soy, peas, or whey), age, gender, or source (animal or plant).

Value: €4,91 B (world), € 1, 46 (Europe)

CAGR: + 7.8% (world), + 7.1% (Europe)

Market drivers: Society are being concern about health; lifestyle changes; increasing health-oriented demand; consumer demands several ready-to-drink supplements (this allows to spend on various

products at the same time); very popular between young people in due to health benefits; increasing demand of plant-based supplements.

Market barriers: Producing with raw materials so prices are very volatile (e.g., soy or milk prices); Ukraine war affects directly to this market; consumer has seasonal pattern (such as gym), highly regulated market.

6.3 FEED MARKET

Animal feeding is the main input (38% of all inputs) into livestock production and 56% of the turnover in livestock production. The global aquafeed market was $78.7 billion in 2020 and projected a 5.6% (CAGR 2021-2030) while the European pet feed market is €19 billion, with an expected 3.15% CAGR (2022-2027). The European compound feed industry employs over 110,000 people.

6.3.1 AQUACULTURE FEED

Description: This market dimension comprises compounded meal for fishes, shrimps, crustaceans, and others to provide a balanced diet depending on ingredients, additive and end-user.

Value: €135,1 B (world), €37, 8 B (Europe).

CAGR: + 10.2%, + 9.43% (Europe)

Market drivers: Increasing consumption of seafood and derivative fish products (e.g., fish meal or fish oil) instead of meat; increased demand for healthy animal protein; consumer aims to reduce its meat consume, growing fish farming activities; necessary method to improve and develop a good quality fish.

Market barriers: Volatile prices because of the products to manufacture the feed; political regulations on product approvals.

6.4 NON-FOOD MARKET

The encapsulation market was $35 billion in 2021, with 12.5% grow (CAGR 2021-2028), where the pharmaceuticals and nutraceutical segment held 66% of the market. Meanwhile, the new popularity of hydrogels in cosmetics boosted the growth to $23.6 billion in 2020, and 7% growth (CAGR 2022-2027).

6.4.1 PHARMA APPLICATION

Description: New kind of pharma application using in the treatment of chronic diseases like cancer. They are the recombination of seven different naturals protein such as interferon. Protein therapeutics market can be segmented by product, application, and therapeutic modalities.

Value: €179.59 B (world), €42.56 B (Europe)

CAGR: + 6.5% (world), + 6.3% (Europe)

Market drivers: Increasing of chronic medical diseases; minimum risks with high efficiency; COVID-19 boosted this market; well-developed healthcare system; society's awareness about therapeutical protein have increased; Europe has extensive research in this area.

Market barriers: High-cost installation and maintenance of the devices; government regulation and a strict regulatory framework; there still are lack of awareness in some countries and ages.

6.4.2 COSMETIC APPLICATIONS (HYDROGEL)

Description: The hydrogel market includes Amorphous, Semi-crystalline, and Crystalline types with different uses such as Personal Care and Hygiene, Pharmaceuticals and Healthcare, Food, Agriculture, and Other End-user Industries.

Value: €22.2 B (world)

CAGR: + 6.7% (world) + 5.94% (Europe)

Market drivers: Hydrogel has a lot of applications in different sectors; hygiene and personal care are being promoted by UNICEF or World Health Organization; hydrogel has several benefits (e.g., water absorption, high biocompatibility); increasing demand on hygiene and personal care products.

Market barriers: Synthetic hydrogels have high production costs and environmental risks; the end-user is not very awareness about; high manufacturing costs; difficulty to decoupling hydrogels, so it can be a problem with drug administrations.

7. TECHNOLOGY TRANSFER PLAN

With the objective of valorization of the expected results of the project, the high-speed transmission system and the quantum key transmission system, some transfer actions are identified to achieve the objective of facilitating their arrival on the market.

These actions include:

- Identification of the results
- Protection
- Maturation
- Choice of exploitation route: license or creation of SpinOff
- Promotion activities (attendance at events, preparation of commercial documents, etc.)

From the beginning of the project, a protection strategy will be implemented. All the members of the consortium will identify those results susceptible to protection in any of its modalities (patent, software registration, secret, etc.) as well as the corresponding allocation of rights between partners for its right exploitation in the future.

With the objective of optimizing the relationship between cost and effectiveness of the property protection types, the market potential of each of them will be taken into account.

Due to the type of R&D activities that are going to be developed within the framework of the project, it is expected that the results obtained will require maturation work before to their possible arrival on the market, both technical and commercial level.

The route of exploitation of the results will be decided according to the evolution of the maturity activities and the availability of a market interested in obtaining the technologies developed.

For the development of the Transfer Plan, the promoters will be supported by the R&D Office of the University

of Vigo. The R&D Office will advise on the possible ways of transferring knowledge and other matters that may arise: Confidentiality Agreements (NDA), protection of results, Material Transfer Agreements (MTA), negotiations with potential licensees or, where appropriate, support in the process of constitution of the SpinOff.

8. TECHNOLOGY WATCH

Most recent patents, relevant publications and other case-studies will be monitored to stay updated on current technologies used on microbiomes and food systems. Benchmarking and a technology observatory will be carried out to develop a strategy for technology transfer.

An initial PATENT ANALYSIS (e.g., EP1903105B1, FR2446605A1, EP3070171A1, EP1482807B1) did not show any result compromising the fermentation of marine food by-products for protein biomass production in EU, thus ensuring “Freedom-to-Operate”.

9. NEXT STEPS

The main goal of the exploitation strategy is to ensure the exploitation of the project results and to enable the target audiences to have access to the project results (data, knowledge and guidelines).

The final version of the Exploitation plan will be provided at month 24. It will include a results ownership list and a thoroughly designed follow-up plan to maximize the impacts after project’s finalization.