



Sustainable Microalgae Protein

The microgravity effect on heterotrophic growth of microalgae for food and nutrition



Eugene Wang
Co-Founder & CEO

I'm a dedicated
dad/entrepreneur using
science to find solutions

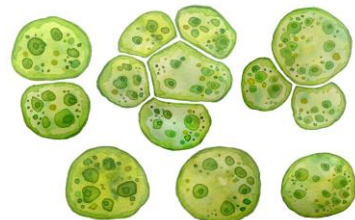
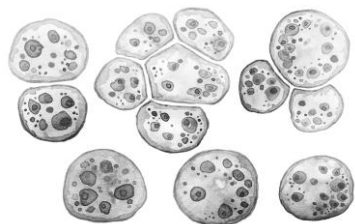
*It all started when I
found out my daughter,
Sophie, suffered an
allergic reaction to
shellfish.*



We have developed a patented cutting-edge process to create an optimal protein flour

Strain Selection Process

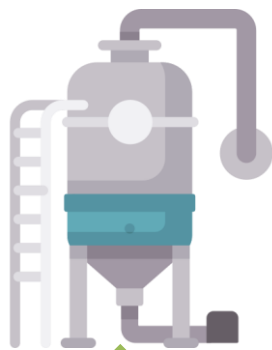
Trade Secrets



Chlorella vulgaris

Protein Induction Process

Patented or Patent Pending



Pioneers using
Industrial Food Waste



spent grains, okara and molasses

Protein Isolation Process

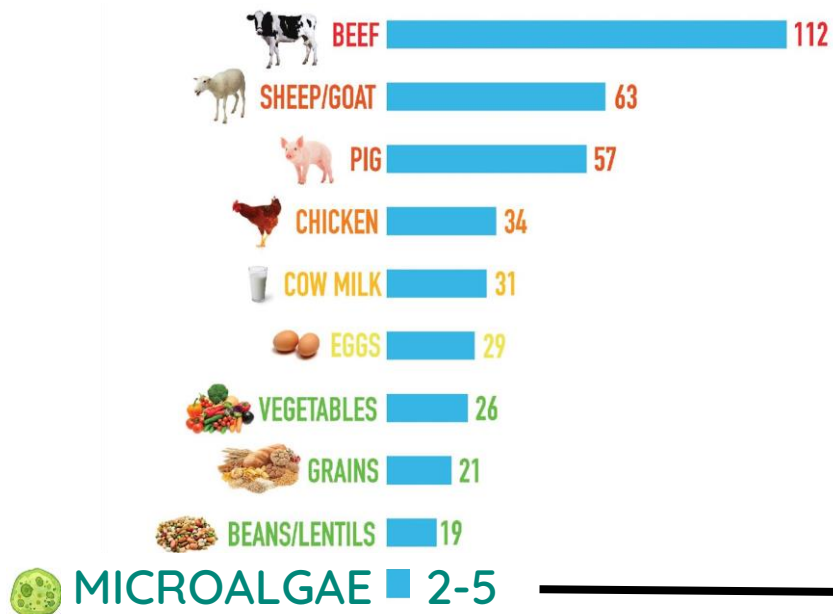
Trade Secrets + Patent Pending



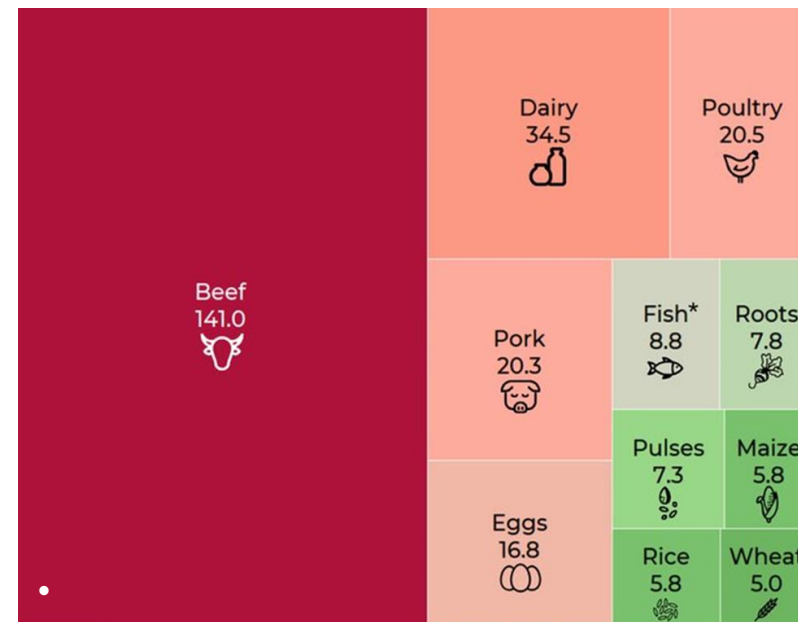
- High protein content (60%)
- High nutritional value (Vitamins, Iron)
- Competitive Price (€6/kg)
- Natural claim
- Circular Economy

Our impact: saving water, land, and 7 SDGs

We ONLY require 2-5 L of water per gram and 0.02 hectares to produce same amount of SBN protein



Liters of water per gram of protein.

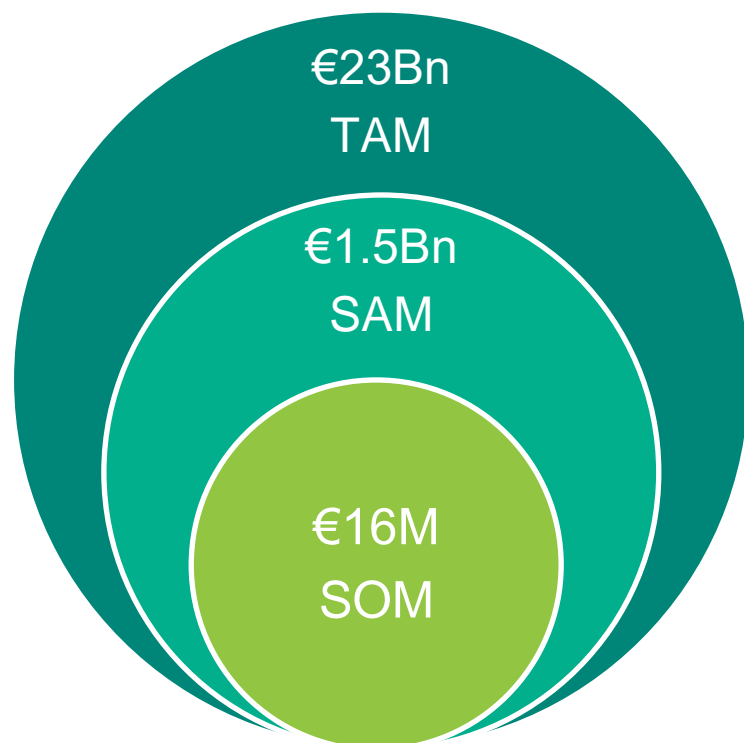


Hectares of land needed to produce 1-ton protein.

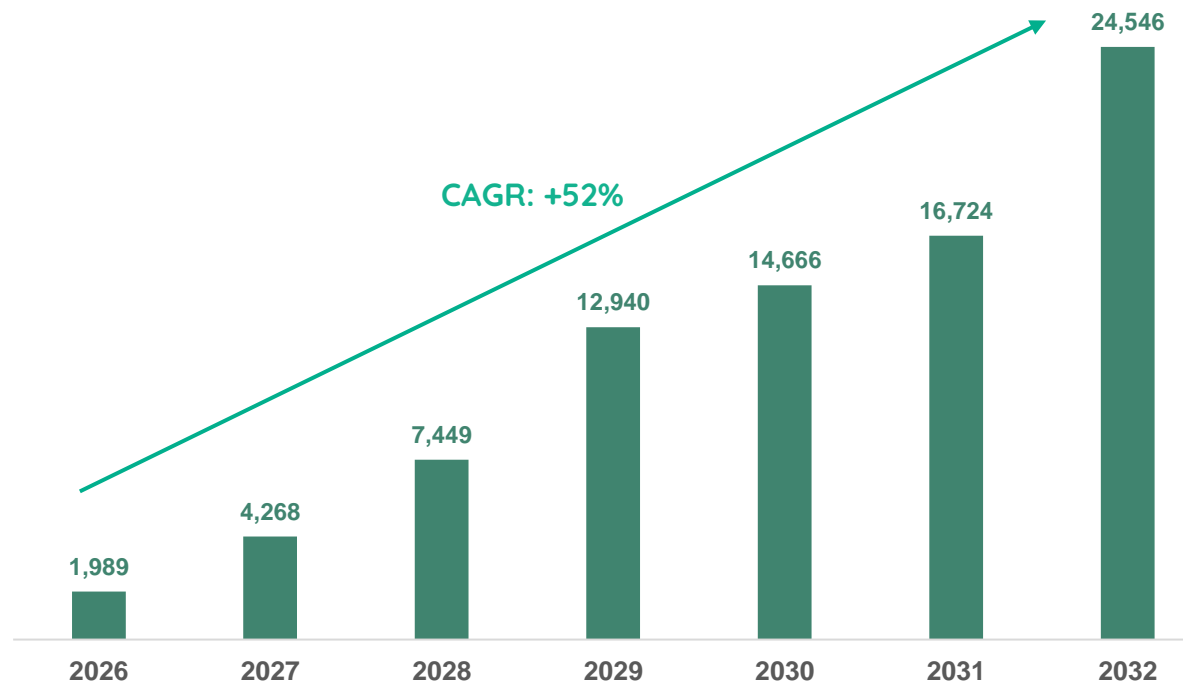


We aim at a Huge & Fast-Growing Market by 2035

Current Market Size



SBN Flour Revenues Projections (in k€)



SOM means penetrating approx. 0.1 % (estimated) of the EU alternative protein market by accessing DE, FR, NL, DK, BE, ES, PT by 2035.

Cost and Production Efficiency are key concerns

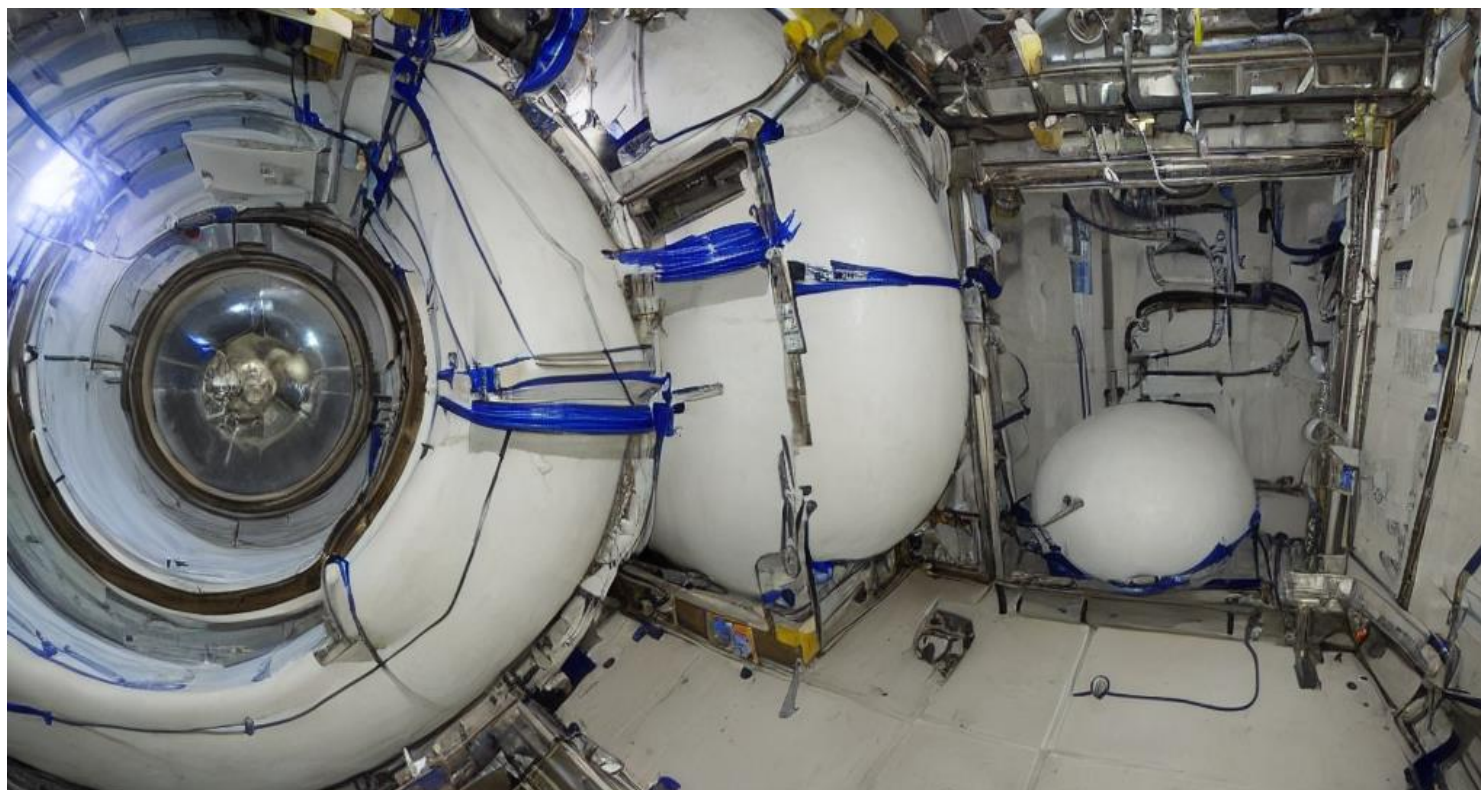
Protein volume production cost analysis (€/kg)



Cost Analysis vs. Other Sources of Plant-Based Proteins

	Price (€/kg)
Sophie's BioNutrients	6.0
PEA	6.0
WHEAT	4.0
SOY - Non-GMO	4.0
SOY - GMO	2.0

The microgravity condition in SAPCE can help understand how gravity and air density are affecting our cost and yield.



We plan to understand to reduce cost

We use the research conducted on ISS to understand how gravity is affecting the following,

1. The heterotrophic growth rate
2. The nutrition composition
3. The rigidity of cell wall & organelles change
4. The oxygen input and CO₂ output
5. The amino acid content

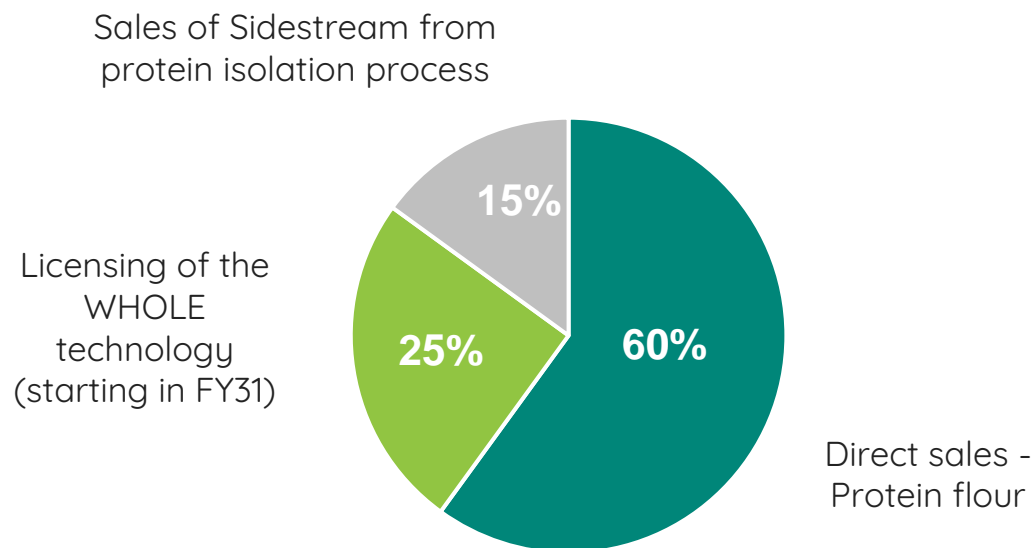
Cost of Risk Mitigation is LOW

Risk	Impact (eg Cost, Schedule, or Technical)	Likelihood of Occurrence	Precaution Measures	Mitigation Plan	Cost of Risk Mitigation (low, moderate, high)
Budget Overrun	Cost	Medium	Constant Budget Reviews	Finding Alternative Funding	Low
Pre-Flight Project Delay	Schedule	Medium	Periodic Meetings	Postpone to Next Flight	Low
Pre-Flight Contamination	Technical	Medium	Attention to The Purity of Culture and Medium	Work with Service Provider	Medium
In-Flight Temperature Changes	Technical	Medium	Temperature Monitoring	Work with Service Provider	Low
In-Flight Payload Malfunction	Technical	Medium	Multiple Pre-Flight Testings	Work with Service Provider	Low

Our revenues model & go-to market strategy

B2B Target Revenues Model: ingredient sales

Focusing on selling to Plant Meat and Plant based dairy

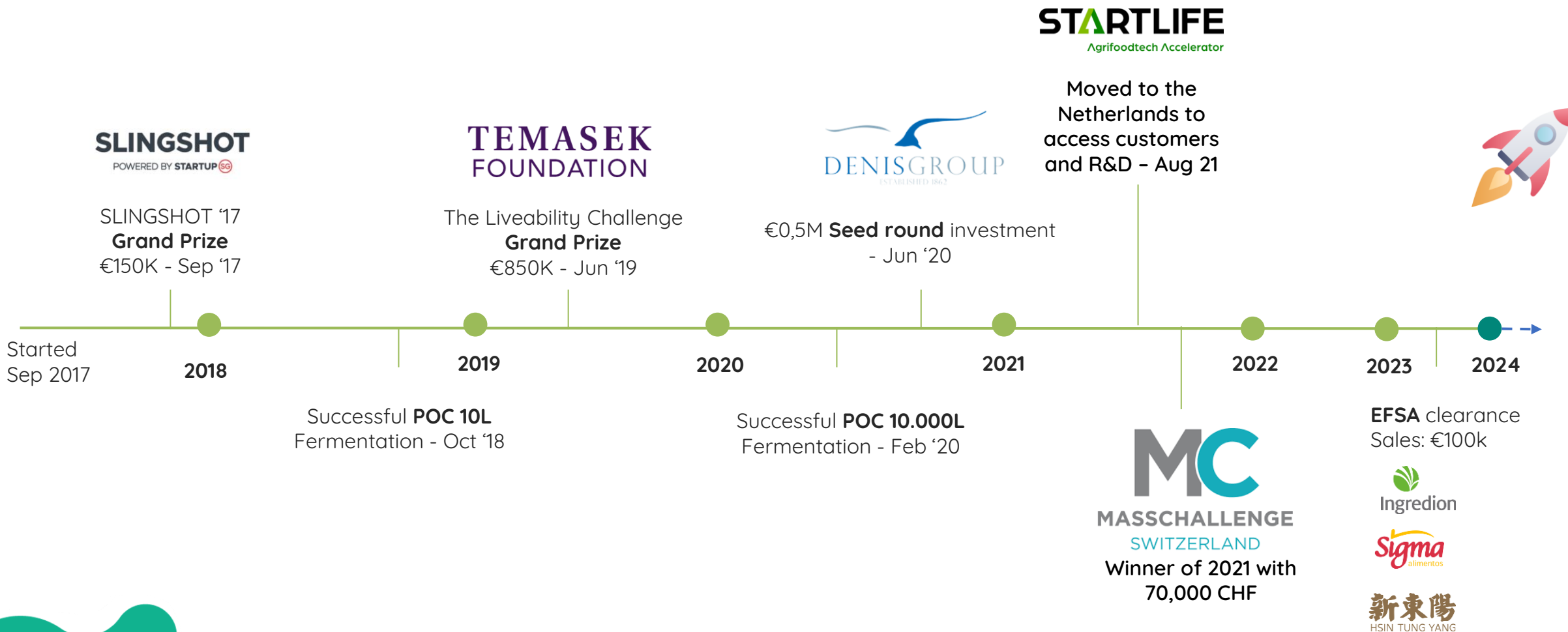


Go-to market strategy

Focusing on servicing Plant Meat and Plant dairy industries

- 
Customer 1 - 10
 - Customization
 - Pilot customers (Small and medium size food processing companies)
- 
Customer 10 - 100
 - Standardization
 - Larger customers (Multinational food processing companies)
- 
Customer 100 - 10000
 - Activating licensing and distributorship worldwide

Our milestones and traction since day 1: €2.5 million raised to date



Our team



Eugene Wang
Co-founder & CEO

20+ years in food
manufacturing

Successfully exited
Sophie's Kitchen
Plant-Based Seafood

MBA from Columbia
Business School



Marieke Vanthoor
Advisor

**Algae production
expert** and food
process technologist

PhD growth of
sponges (WUR)
MSc Bioprocess
Engineer (WUR +
Avans Breda)

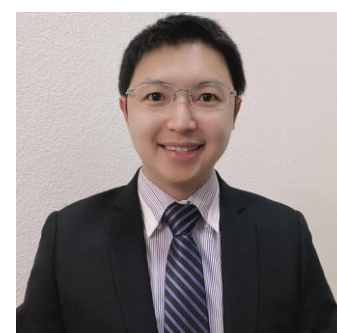


Kirin Tsuei
Co-founder & CCO

20+ years in global
supplement
companies

MS in Nutrition
Science from UC
Davis

Licensed Dietitian



Chen-Han Shih
CSO

10+ years in
microalgae research

PhD in Biosystems
Engineering from
The University of
Arizona

€4 million raise will enable the business to achieve:

- Secure a contract manufacturer to do both our Upstream and Downstream processes in ONE location to save cost
- Running at least 2-3 more flight missions to International Space Station
- Secure EFSA approval dossier (with 5 production batches of data)
- Secure Purchase Orders from 2 prospective customers in Sports Nutrition
- Secure Purchase Orders from 2 prospective customers in Alternative Dairy

Use of funds	€ Million
Contract manufacturing (including CPAEX on equipment)	0.3
R&D	1.2
Marketing & Sales	0.8
General and Administrative & Others	0.7
Planning & execution for future ISS missions	1.0
TOTAL	4.0

Our Mission

Decoupling protein supply from arable land
& reducing the environmental footprint

Let's make EU a sustainable protein powerhouse!!!

Eugene Y. Wang
Co-Founder & CEO

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Our Vision

To make microalgae protein available even on
Mars



Eugene Wang
Co-Founder & CEO at Sophie's BioNutrients

