



Kurahashi Laboratory: Research Content, Results, and Future Prospects



Objective To build a sustainable society where industrial activities are carried out while achieving low carbon emissions.



Dunaliella cultivation in coastal areas



Microalgae *Dunaliella*



Raw material supply

SDGs



This research aims at ⑦ **Affordable and Clean Energy**, ⑨ **Industry, Innovation and Infrastructure**, and ⑬ **Climate Action** (BSP proposes concrete measures against climate change)



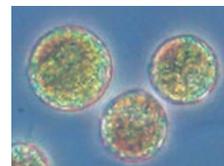
Biomass Shore Project is certified as a project of The University of Tokyo Future Collaborative Creation Promotion to make the most of SDGs (UTokyo Future Society Initiative)

What is *Dunaliella*?

Dunaliella is a type of unicellular microalgae that lives in the sea and mountains, and it is known for producing various **high-value chemicals such as oils from carbon dioxide through photosynthesis**. Currently, it is being actively researched and commercialized all over the world such as in the US and EU countries.

Substances produced by *Dunaliella*

- **Protein: More intracellular protein content than beef**
- **Carotenes: High value-added products** with antioxidant activity
- **Lipid: Edible fats and oils, detergent raw materials**, and possibly as **biofuels**



Protein content that surpasses beef

Our Research Results (2021)

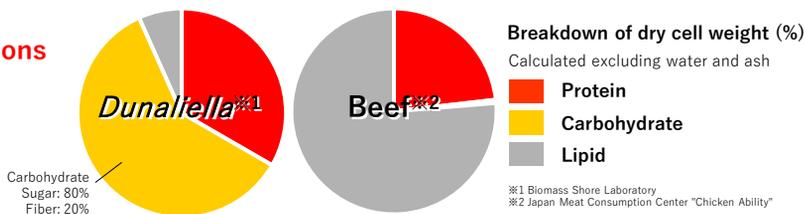
- We succeeded in achieving a growth rate **10 times faster** than the results reported in the literature (experimental site located in Chiba, Japan).
- In addition, the **cost was approximately 10 times less** than the reported in the literature



In September 2021, a joint research agreement was signed with an organization of the Ministry of Production of Peru and a **reproducibility experiment** was started jointly.

- We have succeeded in developing conditions that produce **high concentrations of proteins and carbohydrates**

A significantly higher protein content was achieved compared to beef.



Future Prospects

- Conduct demonstration experiments in Peru to show the reproducibility of the results obtained in Chiba, Japan.
- Continue to conduct research in Japan and Peru aimed at building a biomass complex in the Peruvian coastal desert.

Donations

We have started to solicit donations for research expenses for the next term. We are looking forward to donations from companies and people who support or are interested in the SDGs and the research content of this project. Please feel free to contact us.

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