

Institute of Life Science
Scientific Exchange
Chang Gung University - Kurume University

Date: Monday, July 17, 2026

Time: 10:00 a.m. - 12:00 a.m.

Venue: Basic Medical Science Building #3,
School of Medical Technology

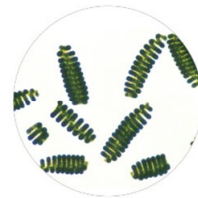
Schedule

10:00 a.m. - 10:40 a.m.

- Introduction of research at the Institute of Life Science

10:45 a.m. - 12:00 a.m.

- Experience of Life Science Experiment
“Isolation of fluorescent protein from Spirulina”

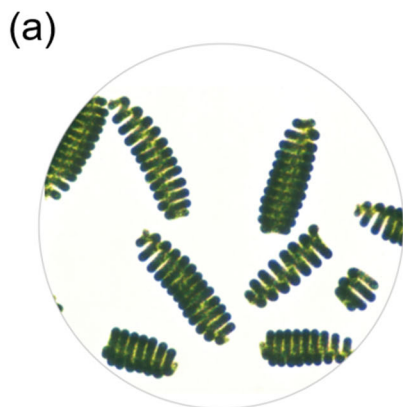


Program of Introduction of research at the Institute of Life Science

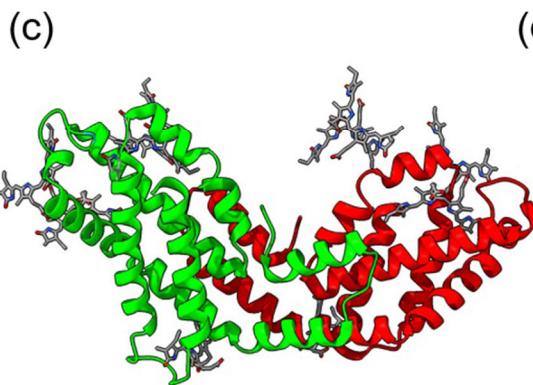
- (1) Shigeaki Saito, Division of Cell Biology
“How do we study cell proliferation using yeast”
- (2) Hiroko Sano, Division of Molecular genetics
“How Do Cells “Think”? Unveiling the Information Processing Inside Living Systems”
- (3) Neus Ballester Roig, Division of Systems Biology
“Investigating molecular systems regulating mammalian sleep”
- (4) Tadato Ban, School of Medical Technology
“Protein science for the understanding of life phenomenon”

Blue fluorescent protein Phycocyanin isolation from cyanobacteria *Spirulina platensis*

Spirulina platensis is a cyanobacterium related to seaweed and is widely used as a dietary supplement. *Spirulina platensis* contains several pigments that help capture light for photosynthesis. One of these pigments is phycocyanin, a bright blue protein. Phycocyanin is widely used as a natural blue food coloring. However, because it is a protein, it loses its blue color when heated above 60 °C. Therefore, it is mainly used in foods that require little or no heating, such as ice cream, jelly, and frozen desserts.



DICヘルスケア事業部



Phycocyanin from *Spirulina platensis*.

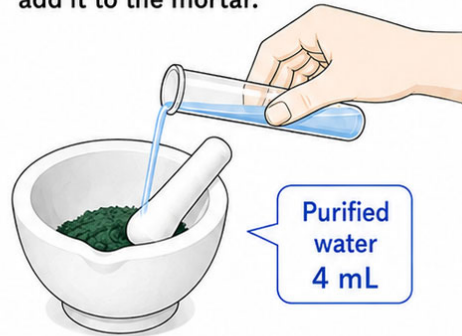
- (a) *Spirulina platensis* observed under a microscope.
- (b) *Spirulina platensis* is commercially available as a dietary supplement.
- (c) Three-dimensional structure of phycocyanin.
- (d) Phycocyanin is used as a natural blue food coloring in the Japanese soda-flavored popsicle GariGarikun.

Extraction of Phycocyanin from Spirulina tablets

- 1** Grind one *Spirulina* tablet into a fine powder using a mortar and pestle.



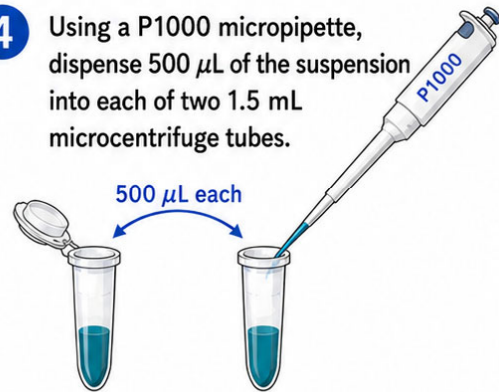
- 2** Measure 4 mL of purified water using a test tube and add it to the mortar.



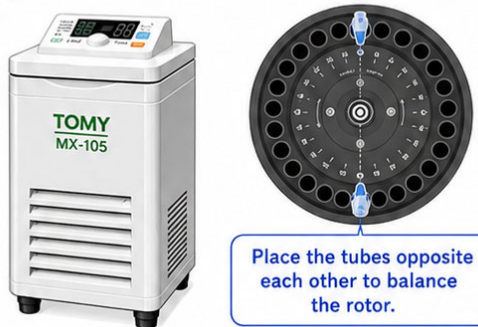
- 3** Mix the *Spirulina* powder and purified water thoroughly with the pestle to prepare a suspension.



- 4** Using a P1000 micropipette, dispense 500 μ L of the suspension into each of two 1.5 mL microcentrifuge tubes.



- 5** Centrifuge at 5,000 rpm for 2 min.



- 6** Using a P200 micropipette, transfer the supernatant to a new 1.5 mL microcentrifuge tube.

