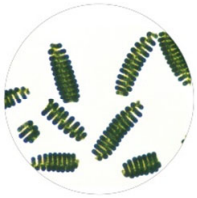
Institute of Life Science

Scientific Exchange
Chang Gung University - Kurume University

Date : Monday, July 14, 2025
Time : 10:00 a.m. - 12:00 a.m.
Venue : Basic Medical Science Building #3
Organizers : Tadato Ban
Language of presentation : English

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.
・Tour of the Institute of Life Science
・Experience of Life Science Experiments
"Isolation of fluorescent protein from Spirulina"



Program

of Introduction of research at the Institute of Life Science

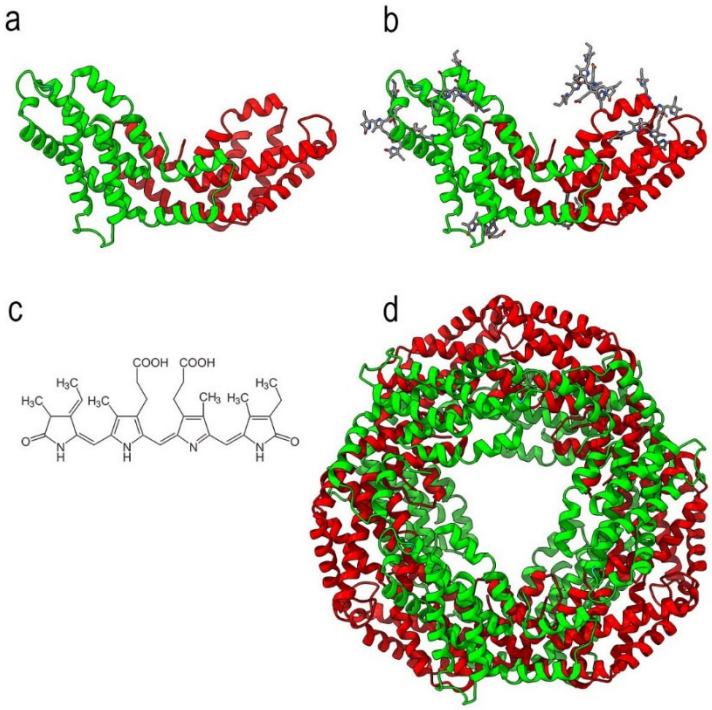
10:00 a.m. - 10:10 a.m.
1）Introduction of Division of Molecular genetics
Takahiro Sato
10:10 a.m. - 10:20 a.m.
2）Introduction of Department of Systems Biology
Ballester Roig, Neus
10:20 a.m. - 10:30 a.m.
3）Introduction of Division of Cell Biology
Shigeaki Saito
10:30 a.m. - 10:40 a.m.
4）Introduction of School of Medical Technology
Tadato Ban

Blue fluorescent protein Phycocyanin isolation from cyanobacteria *Spirulina platensis*

Spirulina platensis is a cyanobacteria related to seaweed and used as a health supplement. *Spirulina platensis* contains several pigments for photosynthesis. One of these pigments is phycocyanin, a bright blue protein. Phycocyanin is used as a safe food coloring. However, since phycocyanin is a protein, it loses its color when heated above 60 °C. For this reason, it is used in foods that don't require much heating, such as ice cream and jelly.

Extraction of Phycocyanin from Spirulina tablets

1. Place one spirulina tablet in a mortar and grind well.
2. Add 4 mL of water and mix gently.
3. Take 750 µL mixture and transfer it to a 1.5 mL plastic tube.
4. Centrifuge at 5,000 xg for 2 minutes.
5. Transfer the supernatant to a new 1.5 mL plastic tube



structure Phycocyanin from *Spirulina platensis*

(a) Phycocyanin consists of α-subunit (red) and β-subunit (green).
(b) The blue color of phycocyanin comes from its covalently bound chromophore, phycocyanobilin
(c) Chemical structure of phycocyanobilin
(d) Phycocyanin forms ring-like hexamer.