

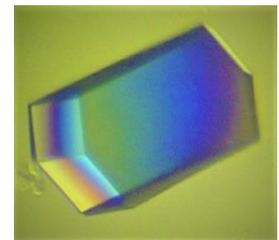
C-Kit Education / Space



For science literacy study

C-Kit Education/Space are hands-on lab kits for high school students and above, using protein crystal growth as the main theme. Students develop scientific literacy through the experiments in the classroom (**C-Kit Education**), and then take the next step by challenging a space experiment aboard the ISS with expert support (**C-Kit Space**). The goal is to obtain beautiful crystals—an easy-to-understand and memorable result.

The ISS offers a microgravity environment with minimal density-driven convection, which is ideal for protein crystallization. Many researchers and students worldwide have pursued high-quality crystals through experiments in space.



Lysozyme

C-Kit Education, a science literacy learning kit, includes the **Crystal Preparation Kit** (CRT130-1E) and the **Observation Set** (CRT130-3E). The preparation kit contains tools, reagents, and purified lysozyme, while the observation set includes a high-performance light and a loupe for viewing crystals without a microscope. Students crystallize purified lysozyme using the same method as the space experiment, and study the effects of **NaCl** and **KCl** under **10 conditions**.



CRT130-1E



CRT130-3E

Through this experiment, students learn how to design an experimental plan based on a scientific question, prepare the required reagents, carry out the procedures, and observe the results. They also develop skills in presenting their findings and discussing them with others. We recommend a two-step plan: an initial experiment under **6 conditions**, followed by class discussion and a second experiment under **4 conditions** near the optimal range.

The kit includes detailed instructions that enable students to perform the experiment on their own. Students can also learn the experimental techniques by watching instructional videos available on our website. A **Teacher's Guide** with solution recipes and crystal images is also available.

C-Kit Education / Space



タンパク質結晶実験教育シリーズ

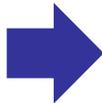
C-Kit Space, the ISS protein crystallization kit, is an official teaching kit used in the **Space Experiment Class** organized by **Japan Manned Space Systems Corporation (JAMSS)**.

In this program, students can learn about the space environment through engaging talks by space experts, and also have the opportunity to launch their own samples to the ISS to carry out a crystallization experiment. Students may conduct crystallization under standard conditions, or crystallize their samples using their own optimized conditions determined through **C-Kit Education**.

The samples remain on the ISS for approximately one month, during which high-quality crystals are grown, and are then returned to the students. This kit uses the same equipment that professional researchers have used for space-based protein crystallization experiments.

By watching the live launch coverage on NASA TV and seeing the rocket carrying their own samples lift off, students are deeply inspired. Our hope is that this experience encourages them to think, *“One day, we want to be part of science and technology, too.”*

C-Kit Education
Science literacy study



C-Kit Space
Exposure to cutting-edge
science and technology

CRT130-1E : JPY22,000-
CRT130-3E : JPY 3,500-
Suggested retail price
(excluding tax and shipping fees)

Additional fee is required
for the space experiments.
Please contact to JAMSS.

Products / General Information
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