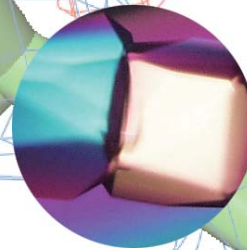
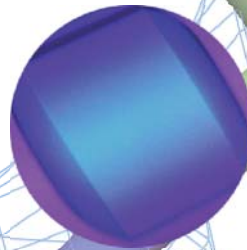
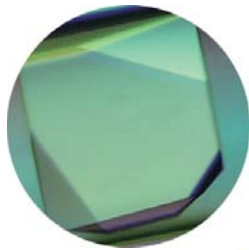
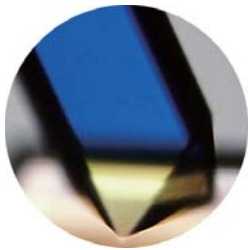


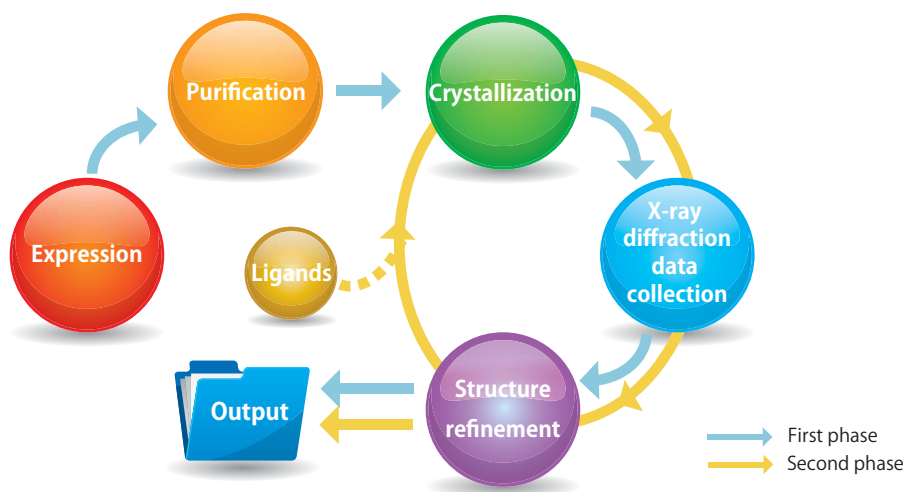
Science Service Provider for Elucidation of Protein Function and Drug Design

# CONFOCAL SCIENCE



## C-Platform

C-Platform is a two-phase integrated service for the higher resolution crystallography needed for experiments, especially in the fields of drug design and enzyme reaction mechanism research. In the first phase, Confocal Science will fix an experimental protocol for the target protein. In the second phase, you can try your ligands to find complex structures. Confocal Science, in alliance with Maruwa Foods and Biosciences and Wako Pure Chemical Industries, can provide high-resolution X-ray crystallography with our expert scientists. Our extensive experience allows us to provide the full range of the services that our customers need, from protein expression to structure analysis.



### Expression and purification

We synthesize DNA for the target protein and express it in E. coli or in insect cells and purify it to crystallization quality. Confocal Science has considerable experience in purifying proteins to crystallization grade.

### Unique initial crystallization test

Using a rational approach, we initially test the crystallization conditions with a small amount of protein solution using our database and unique optimization steps.

### High-quality protein crystallization

Are your crystals too small, highly clustered or of low resolution? Confocal Science has many techniques to improve crystal quality and is experienced in handling crystals which diffract at nearly or beyond 1 Å resolution.

### Counter-diffusion method for crystallization

Not only popular vapour-diffusion method, but also the counter-diffusion method is available for crystallization in our C-Platform service. The counter-diffusion method has advantages not only in quality but in reproducibility. It facilitates obtaining crystals of protein-ligand complexes by soaking the crystals with ligands.

### X-ray diffraction data collection

Confocal Science has an industrial contract to collect X-ray diffraction data using mail-in service of the synchrotron radiation facility.

### Structure refinement

Confocal Science have abundant experience in structure determination and analysis of X-ray diffraction data which is sometimes beyond 0.8 Å resolution.

### Customize your own platform

Once the refined structure data is obtained, your experimental protocol is established, and you can use our C-Platform service as your own platform. Try new ligands, one after another, to bind your target proteins. Choose to use our full service or only the parts you want.

### For your satisfaction

If preferred results, such as a refined structure, are not obtained, Confocal Science will find the reasons why and provide beneficial feedback, so you can go forward with the next step in your work.

# C-Tube

## C-Tube kit

C-Tube is a protein crystallization tool for X-ray diffraction experiments. Crystals grow in capillaries using a counter-diffusion mechanism. One set includes 24 trials.

Confocal Science is licensed by JAXA to use the outcome of JAXA's technical development for this product. (Patent: 4354457(JP); 11287219(US); EP1630263 pending(EPO))  
 García-Ruiz, JM, Moreno, A, Acta Cryst., D50, 484-490 (1994)  
 Tanaka, H. et al., J. Synchrotron Rad. 11, 45-48 (2004)



## C-Tube starter kit

The C-Tube starter kit contains an instruction manual; a CD with C-Profile, a 1-D simulation program for estimating the diffusion process in a capillary; and a tool that makes harvesting crystals easier. The tool is a reverse-type tweezers with a mechanical base that can hold a capillary stable.



## Crystallization cell for larger crystal (JCB-SLC)

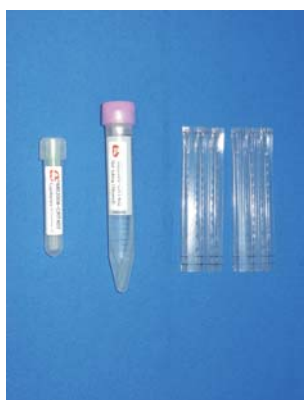
JCB-SLC is a crystallization cell designed for growing larger crystals, especially for neutron diffraction experiment.



## Crystallization devices for space experiment

Confocal Science provides crystallization devices and tools which are used in JAXA's protein crystallization project in the International Space Station. They are commercially available.

### JCB-SGT starter kit



JCB-SGT is designed for JAXA protein crystallization. The kit contains all the requirement for assembling a pair of JCB-SGT cells including gel-tubing and  $\Phi 0.5\text{mm}$  capillaries.

### JCB-SGT loading tools



To help assemble JCB-SGT, this package contains a heat controller, a point sealer, an SGT holder, silicone tubing for loading the capillary, and sealing compound.

### JCB-SGT Sealer and SealerStand

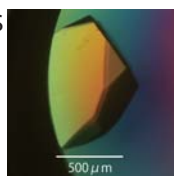


JCB-SGT Sealer with its special SealerStand is designed to seal a JCB-SGT after sample loading. The liquid does not spill off because the JCB-SGT stands up right in the sealer.

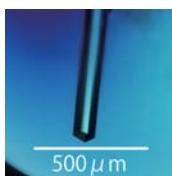
# C-Protein

## High-quality protein samples

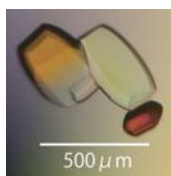
High-quality protein samples can be used for the investigation of crystal growth mechanisms and for experimental trials for higher resolution crystallography.



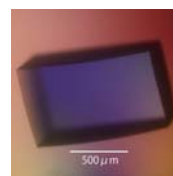
Lysozyme  
1.2 Å in space



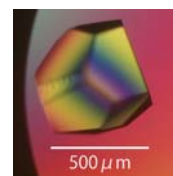
Glucose isomerase  
0.98 Å in space



Cellobiohydrolase  
0.93 Å in space



Alpha-amylase  
0.95 Å in space



Ribonuclease

At present, lysozyme, glucose isomerase, cellobiohydrolase, alpha-amylase, and ribonuclease are available. Except for ribonuclease, these proteins are provided for JAXA's high-quality crystallization experiment in space.

## C-Profile

C-Profile is a program to calculate protein's physicochemical properties from its FASTA sequence. This data is useful in optimizing conditions for crystallization. The output will be helpful and suggestive for the optimization of the crystallization condition from the aspect of ionic composition of each solution.



## C-Clinic

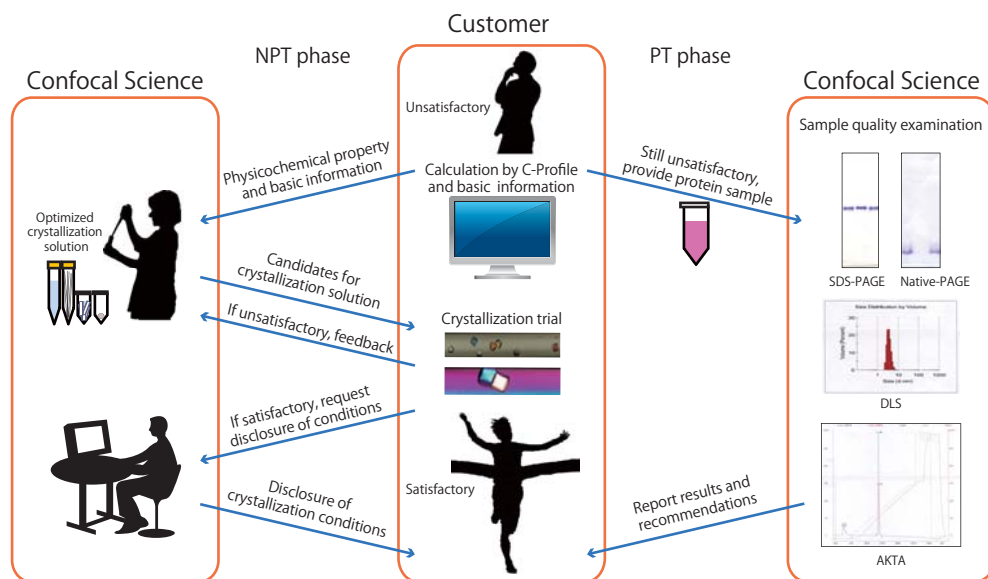
C-Clinic is an interactive service which to find the best solutions to difficulties in a customer's crystallization experiment. Choose from either or both of the phases in this service.

### Non Protein Transfer Phase (NPT)

After receiving your calculations from C-Profile and some basic information on your target protein, Confocal Science will provide, for a base fee, a crystallization kit with several kinds of optimized crystallization solutions and instructions. With detailed information from your crystallization trial, we can also provide an improved solution kit if necessary. If a fine crystal grows, you have the option of requesting the crystallization conditions for a contingency fee.

### Protein Transfer Phase (PT)

If crystals do not grow well, or if crystals are still unsatisfactory after the several trial, we may examine the sample quality. The customer is expected to provide us with a small amount of the protein sample under a material transfer agreement. We will evaluate it and report our recommendations.



## C-Bag

C-Bag can maintain an anaerobic condition for your sample. If a protein sample is easily degraded through oxidation, this bag can help maintain sample quality. For anaerobic crystallization experiments, the crystallization cells and even the vapor-diffusion crystallization plates can be placed in this bag.



[http://www.confsci.co.jp/index\\_e.html](http://www.confsci.co.jp/index_e.html)  
[info@confsci.co.jp](mailto:info@confsci.co.jp)

7F, No. 2 Hayakawa Bldg.,  
 2-12-2 Iwamoto-cho, Chiyoda-ku,  
 Tokyo 101-0032 JAPAN  
 TEL +81-3-3864-6606  
 FAX +81-3-3864-6605

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 and Wako Pure Chemical Industries.

