

# LCP Sandwich Set

## Applications

Crystallization screening of membrane proteins in lipidic mesophase as well as bicelle method and batch method.

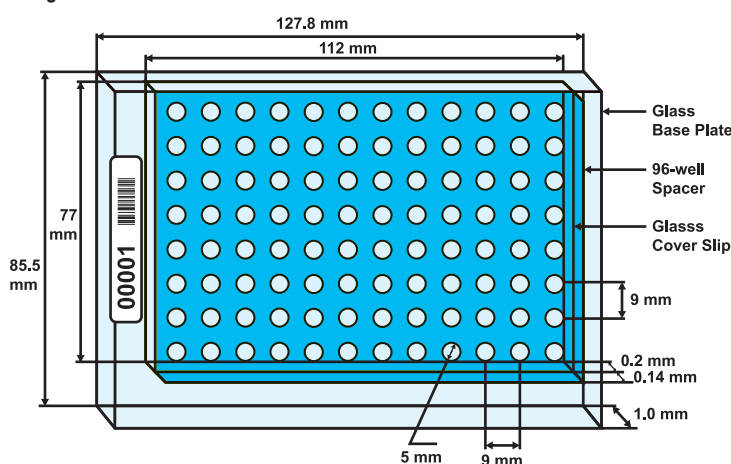
## Discussion

The LCP Glass Sandwich Set is a specially designed plate for either automated or manual setting of 96 Lipidic Cubic Phase matrix screening experiments. The plate can also be used for the bicelle method and batch method. The thin (< 2 mm high) plates have exquisite optical properties and are well suited for the detection of microcrystals and for birefringence-free imaging between crossed polarizers. The plates allow for in meso crystallization trials with 50 nanoliters protein/lipid mesophase and 1 microliter precipitant solution per trial.

## Features

- Small volume LCP, bicelle and microbatch crystallization
- High quality glass optics
- Excellent drop optics since mesophase bolus is physically sandwiched between two optically clear surfaces eliminating the mesophase/aqueous medium interface and the corresponding roughness
- Glass plate allows for visualization of microcrystals using birefringence-free examination between crossed polarizers
- Superhydrophobic glass surfaces

Figure 1



## Description

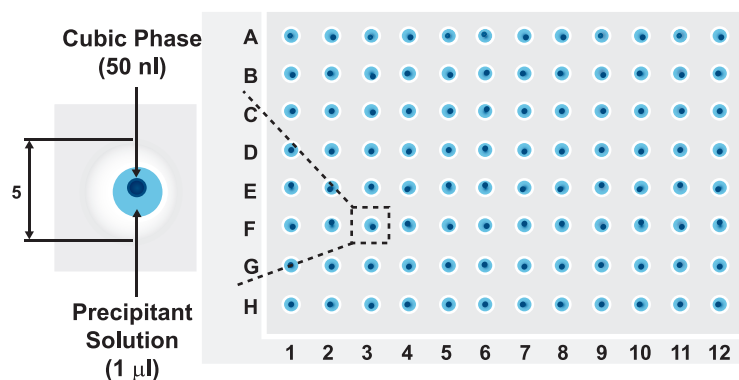
The 96 well LCP Glass Sandwich Plate consists of a) 127.8 x 85.5 x 1 mm glass base plate with the footprint of an SBS-compliant plate, a 140 µm thick double sticky spacer with 96 punched out holes and b) a 0.2 mm thick glass coverslip. The double sticky spacer is already adhered to the base plate. A brown paper liner covers and protects the top of the double sticky spacer and base plate. The 0.2 mm thick glass coverslip fits over and seals the entire 96 well lower plate. Alternatively a series of twenty-four siliconized 18 x 18 mm No. 1 microscope cover glass from the package and dust the glass using Duster Canned Air or other clean air source. Each 18 x 18 mm No. 1 cover slide seals 4 wells. Space for a bar code

is available at the left end of the plate. Each well can contain 50 nanoliters of cubic phase and 1 microliter of crystallization reagent.

## Instructions for LCP Sandwich Set

1. Remove a single base plate with 96 well spacer from the package and dust the plate using Duster Canned Air or other clean air source.
2. Pipette 50 nanoliters of cubic phase into each of the 96 wells.
3. Pipette 1 microliter of crystallization reagent onto each of the 96 drops of LCP.
4. Carefully remove the brown liner from the base plate being careful not to touch any drops. The brown liner can be removed before applying the drops but some find it offers a guide when manually dispensing drops.
5. Remove a single superhydrophobic cover glass from the package and dust the plate using Duster Canned Air or other clean air source.
6. Being careful to align the cover with the base plate, lower the cover glass onto the base plate. Using a brayer or the removed brown liner or piece of paper protecting the cover, gently and carefully press on the cover in the areas of adhesive to seal the plate.

Figure 2



## Instructions for Alternative Sealing for Manual Set Ups

1. Remove a single base plate with 96 well spacer from the package and dust the plate using Duster Canned Air or other clean air source.
2. Carefully remove the brown liner from the base plate.
3. Pipette 50 nanoliters of cubic phase into each 4 of the wells on the base plate. Begin with A1, A2, B1, B2 (first row, left hand side, first two wells and second row, left hand side, first two wells).
4. Pipette 1 microliter of crystallization reagent onto each of the 4 drops of LCP.
5. Remove a single siliconized 18 x 18 mm No. 1 microscope cover glass from the package and dust the glass using Duster Canned Air or other clean air source.
6. Being careful to align the cover glass with the base plate and four drop wells, lower the cover glass onto the base plate. Using a brayer or the used brown liner or piece of paper protecting the cover glass, gently and carefully press on the cover glass in the areas of adhesive to seal the plate.

# LCP Sandwich Set

**HAMPTON**  
**RESEARCH**

*Solutions for Crystal Growth*

User Guide

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## References

1. Nano-volume plates with excellent optical properties for fast, inexpensive crystallization screening of membrane proteins. Vadim Cherezov and Martin Caffrey. *J. Appl. Cryst.* (2003). 36, 1372±1377.
2. A robotic system for crystallizing membrane and soluble proteins in lipidic mesophases. Vadim Cherezov, Avinash Peddi, Lalitha Muthusubramaniam, Yuan F. Zheng and Martin Caffrey. *Acta Cryst.* (2004). D60, 1795±1807 DOI: 10.1107/S0907444904019109.
3. Bicelle crystallization: a new method for crystallizing membrane proteins yields a monomeric bacteriorhodopsin structure. Faham, S. & Bowie, J. U. (2002). *J. Mol. Biol.* 316, 1±6.

## Related Products

**HR3-151** LCP Sandwich Set – Pack of 20 plates

**HR3-152** 18 x 18 mm No. 1 Siliconized Cover Slides, Squares  
Case of 10 packs. 1,000 total pieces (100 pieces per package)

## Technical Support

Inquiries regarding LCP Sandwich Set, interpretation of screen results, optimization strategies and general inquiries regarding crystallization are welcome. Please e-mail, fax, or telephone your request to Hampton Research. Fax and e-mail Technical Support are available 24 hours a day. Telephone technical support is available 8:00 a.m. to 4:30 p.m. USA Pacific Standard Time.

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