1536 Well IMP@CT™ LBR Plate

For High-Throughput Microbatch Crystallography

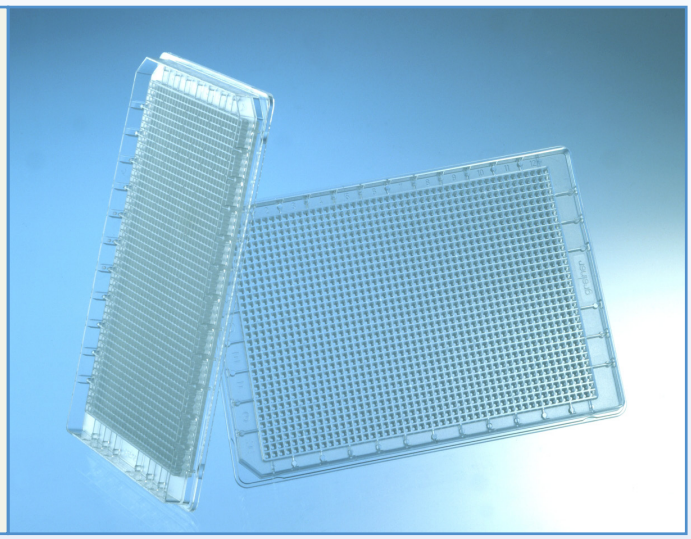
Greiner Bio-One, in collaboration with the Hauptman-Woodward Medical Research Institute, has developed a 1536 well microplate for use in high-throughput microbatch crystallography. Half-conical wells with optimised geometry allow small-volume crystallisation and avoid the spread of droplets away from the center, a prerequisite of effective crystallisation under oil. Smooth, flat bottoms assure perfect microscopic investigation of growing crystals. A well-fitting transparent lid is available.

The 1536 well IMP@CT™ LBR plate provides superior optical properties for crystal scoring with polarised light.

Designed to facilitate automated high-throughput small-volume protein crystallography in fully automated systems, the 1536 well IMP@CT™ plate enables the investigation of optimal crystal growth conditions at high speed and reduced cost.

Key Facts

- Microbatch crystallisation plate
- 1536 wells, optimised geometry, 10.1 µl
- Flat bottom, Ø 0.9 mm
- Automation-friendly
- Customised barcoding
- L: 127.76 mm / W: 85.48 mm / H: 10.4 mm



Ordering Information

Cat. No.	Product Description	Quantity per Bag	Quantity per Case
790 801	1536 well IMP@CT™ LBR Plate, 1536 conical wells, flat bottom	15	60
656 190	Low profile lid	20	200

Revision: March 2013 - F073 050

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Greiner Bio-One IMP@CT™ Plates for Microbatch Protein Crystallisation under Oil

In microbatch under oil experiments, crystallisation drops are located under a layer of oil. Paraffin, silicone, or a mixture of both oils may be used to perform the experiment. Paraffin oil acts to almost completely prevent water evaporation, resulting in a very slow change in drop conditions over a long period of time. Therefore, initial conditions in the crystallisation drop stay more or less constant with its use. Silicone oil – in contrast to paraffin oil - allows water vapour diffusion. The use of silicone oil in microbatch techniques results in a continuous increase in concentration of all components contained within the crystallisation drop, thereby allowing a wide range of conditions for crystallisation to be examined in a single setup. The rate of water evaporation from the drop is dependent on the ratio of paraffin and silicone oil (a higher ratio of silicone oil will increase the rate of water evaporation). The most common ratio to start with is 1:1. Water evaporation will continue until the drop completely dries out.

The 96 well IMP@CT™ Plates feature a double-rimmed perimeter chamber for the addition of water, reagent solution or gel to control evaporation in the plate or to perform vapour batch experiments.

The microbatch under oil technique is especially beneficial for oxygen-sensitive proteins, as employment of oil over the crystallisation drop affords a protective layer to avoid contact of air-borne oxygen. The 96 well IMP@CT™ Plate design enables bulk addition of oil to the microplate, followed by additions of screening and protein solutions.

Guideline for microbatch techniques with Greiner Bio-One 96 well IMP@CT™ Plates:

Fill the entire plate with 10 - 15 ml of oil. Pipette screening and protein solutions into the wells. Typical drop volumes may vary from 200 nl to 4 µl, and the theoretical well volume is capable of 10 µl containment. A centrifugation step (1,000 g) is not mandatory, but may be applied to ensure a good mixture between screening and protein solutions.

Alternatively, wells can be pre-filled with 6 - 7 µl of oil before the pipetting of protein and screening solutions and bulk-addition of oil. To simply fill the wells with up to 10 µl of oil (depending on drop volume) is also feasible.

Guideline for microbatch techniques with Greiner Bio-One 1536 well IMP@CT™ Plates:

Fill the wells with 5 - 7 µl of oil; then centrifuge the plate with 1,000 g to eliminate putative air bubbles. Add screening and protein solution (optimal drop volume is < 1 µl), then centrifuge again.

Please note both 96 and 1536 well IMP@CT™ Plates are automation-friendly and all pipetting steps may be performed with robotic systems. Exact use of the IMP@CT™ Plates is dependent on type of dispensing equipment and individual experimental design.

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