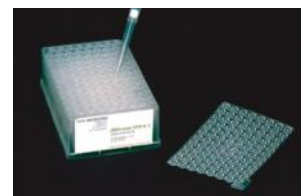
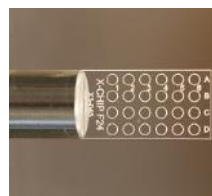
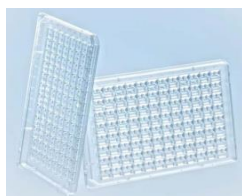


MiTeGen

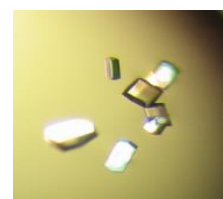
Crystallography Catalog

2014, Volume 1

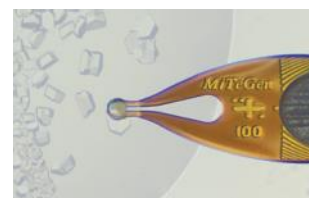
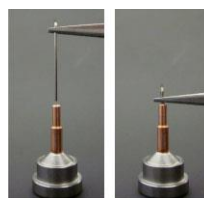
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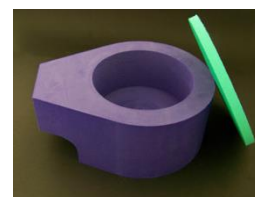
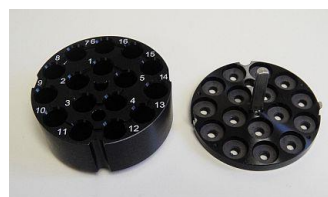
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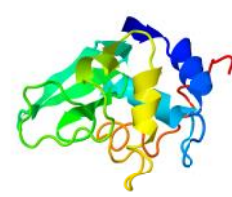
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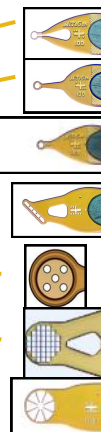
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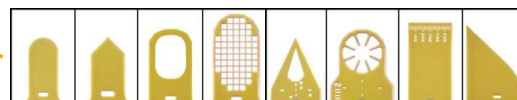
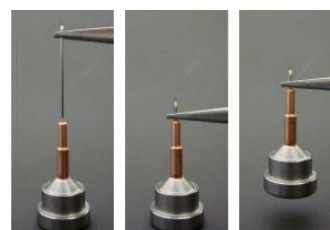
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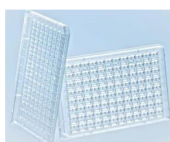
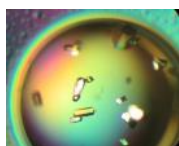
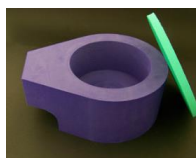
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Protein Crystallography Starter Kit



Contents

- 20 Dual-Thickness MicroMounts™
(M2-L18SP-A2, with 5 each of 75, 100, 150 and 200 μm apertures)
- 10 Reusable goniometer bases
(GB-B3S-R)
- 10 Magnetic CryoVials
- 20 MicroRT™ Capillaries
- 1 Gel-loading pipette tip
- 1 Bottle LV CryoOil
- 1 Pair heavy-duty serrated-end tweezers
- 1 Instruction manual

Description	Cat. No.	Price
Protein Crystallography Starter Kit	CSK-2	\$345

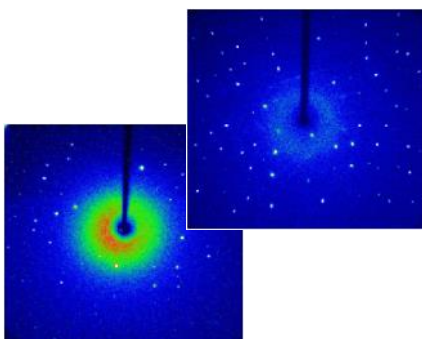


Small Molecule Crystallography Starter Kit



Contents

- 20 Dual-Thickness MicroMounts™
(M2-L18SP-A2, with 5 each of 75, 100, 150 and 200 μm apertures)
- 10 Reusable goniometer bases
(GB-B3S-R)
- 10 Magnetic CryoVials
- 1 Tube Apiezon N Cryogenic vacuum grease
- 1 Pair heavy-duty serrated-end tweezers
- 1 Instruction manual



The improvement in data quality when switching from glass fiber (lower left) to MiTeGen brand mounts (upper right).
Pictures courtesy of UK National Crystallography Service

Description	Cat. No.	Price
Small Molecule Crystallography Starter Kit 1	SMSK-1	\$410
Small Molecule Crystallography Starter Kit 2 with 20 style B4 bases instead of GB-B3S-R bases	SMSK-2	\$310



Tech Tip:
Using MicroMounts™
and MicroLoops™ for
Small Molecule and
Inorganic Crystallography

**Note: Data and pricing for standard 18 mm / SPINE length rods.
All products are available on non-standard rod lengths of 11, 19, and 25 mm. Contact MiTeGen for details.*

Learn more and order online at MiTeGen.com

MicroRT™ Room Temperature Starter Kit

Contents

- 20 Dual-Thickness MicroMounts™
(M2-L18SP-A2)
- 10 Reusable goniometer bases
(GB-B3S-R)
- 1 MicroRT™ Tubing Kit
- 1 MicroRT™ Aligner
- 1 Pair heavy-duty serrated-end tweezers



See pages 18 and 19 for more information about the MicroRT™ System

Description	Cat. No.	Price
MicroRT™ Room Temperature Starter Kit	RTSK-1	\$300

Crystallography Sampler Kits

Convenient assortments of our most popular mount designs and sizes

Size	Total QNTY	Rod Length*	Cat. No.	Price
Crystal Harvesting Sampler Kit 1 contains 40 mounts for crystal harvesting and data collection:				
10 Dual-Thickness MicroMounts™ (5 - 50µm & 100µm apertures) 5 MicroMeshes™ (5 - 400/25µm aperture) 5 Dual-Thickness MicroLoops (5 - 200µm aperture) 10 Dual-Thickness MicroLoops LD (5 - 50µm & 150µm apertures) 5 MicroLoops E™ (5 - 50x500µm vertical aperture) 5 MicroGrippers™ (5 - 50µm aperture)	40	18 mm	MSK-1	\$180
Crystal Harvesting Sampler Kit 2 contains 120 mounts for crystal harvesting and data collection:				
20 Dual-Thickness MicroMounts™ (1 - M2-L18SP-A2 assortment (box of 20)) 20 Dual-Thickness MicroLoops LD™ (1 - M5-L18SP-A2LD assortment (box of 20)) 20 Dual-Thickness MicroLoops (1 - M5-L18SP-A4 assortment (box of 20)) 20 MicroMeshes™ (1 - M3-L18SP-A1 assortment (box of 20)) 20 MicroLoops™ E, (1 - M8-L18SP-VA1 assortment (box of 20)) 20 MicroGrippers™ (1 - M7-L18SP-A1 assortment (box of 20))	120	18 mm	MSK-2	\$495

Custom Assortments also available, contact MiTeGen for details

*Note: Data and pricing for standard 18 mm / SPINE length rods.

All products are available on non-standard rod lengths of 11, 19, and 25 mm. Contact MiTeGen for de-

Learn more and order online at MiTeGen.com

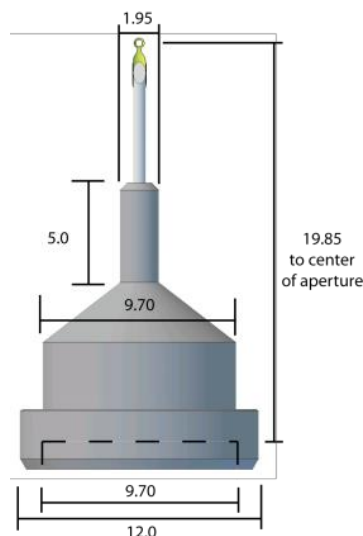
Tech Tip:
Using MicroMounts™
and MicroLoops™ for
Macromolecular
Crystallography



Mount & Base Assemblies

Ready-to-use, simple, and compatible with major beamlines throughout the world

Use our *hassle-free reusable* assemblies for even more benefits



- ✓ No more fumbling with glue
- ✓ Easy replacement of damaged mounts
- ✓ Helps decrease costs and increase throughput
- ✓ Secure gripping at all temperatures below T=300 K
- ✓ Easy adjustment of crystal aperture height
- ✓ Easy swapping of mount and loop styles
- ✓ Precision machined for durability and reliability

Catalog Numbering:

A-M2-xx-yy

Base style, e.g.: B1, B1-R, B1A, B1A-R, B3, B3-R, B3S, B3S-R, B5, B5-R

Aperture (μm), e.g.: 10, 20, 30, 35, 50, 75, 100, 200, 300, A1, A2, etc.

Description	Standard Bases			Reusable Bases		
	Cat No	QNTY	Price	Cat No	QNTY	Price
Dual-Thickness MicroMount™ Assembly	B-M2-xx-yy	20	\$220	B-M2-xx-yy-R	20	\$305
MicroLoop LD™ Assembly	B-M5-xxLD-yy	20	\$220	B-M5-xx-yy-R	20	\$305
MicroCrystal Mount™ Assembly	B-M4-xx-A1	20	\$	B-M4-xx-A1-R	20	\$
MicroLoops™ Assembly	B-M5-xx-yy	20	\$188	B-M5-xxLD-yy-R	20	\$275
MicroLoops E™ Assembly	B-M8-xx-yy	20	\$220	B-M8-xx-yy-R	20	\$305
MicroMeshes™ Assembly	B-M3-xx-yy	20	\$204	B-M3-xx-yy-R	20	\$291
MicroGrippers™ Assembly	B-M7-xx-yy	20	\$220	B-M7-xx-yy-R	20	\$305

Options	Cat No	Price
Add CryoVials	A-M#-xx-yy	\$50
Add Barcodes	HTB-M#-xx-yy	\$50
Add Barcodes & CryoVials	HTA-M#-xx-yy	\$100

Find all the info you need to get your experiment up-and-running at the beamline

mitegen.com/beamlines

The field of high-throughput X-ray crystallography has moved research forward at a rapid pace. Sample placement technology is still evolving and beamlines around the world have specific sample support and hardware requirements for optimal use. Our beamline guide provides the necessary technical information to ensure the sample supports used for harvesting and transporting your crystals are fully compatible with the beamline's system

**Get the necessary technical information,
including:**

- ⇒ Pucks/cassettes for shipment and automated sample changing
- ⇒ Crystal mount styles accepted
- ⇒ Goniometer bases (caps) supported by the automatic sample changer
- ⇒ Local contact info
- ⇒ Beamtime applications
- ⇒ Facilities available



Synchrotron Soleil

**Info available for each crystallography beamline
at the following synchrotrons**

Americas

- ALS
- APS
- CAMD
- CHESS
- CLSI
- LNLS
- NSLS
- SSRL

Europe

- ALBA
- BESSY
- DIAMOND
- ELETTRA
- EMBL/DESY
- ESRF
- KCSRNT
- MAX II
- MPG/DESY
- SLS at PSI
- SOLEIL

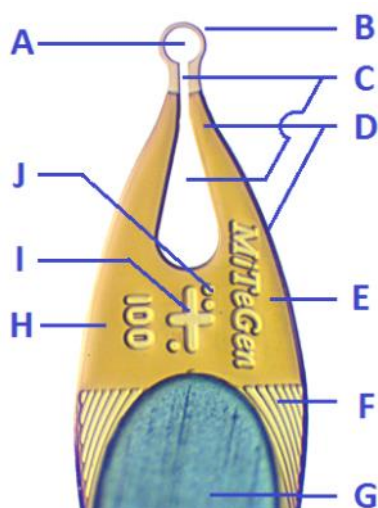
Asian, Japan & Australia

- AUSTRALIA
- BSRF
- NSRRC
- PAL
- PF
- SPring-8

Superior Features of the High Quality Crystal Mounts

Benefits

- ✓ Easier crystal harvesting
- ✓ Less background X-ray scatter
- ✓ Less liquid around your crystal
- ✓ Faster flash cooling
- ✓ Less vibrations in the cryostream
- ✓ Accurate and reproducible crystal positioning
- ✓ Easier crystal visualization and alignment
- ✓ Easier automation



100 µm Dual-Thickness MicroMount™ shown
Catalog #: M2-L18SP-100

Features:

- A - Sample aperture** sizes from 10 µm to 1 mm, to match your sample size, and a variety of aperture shapes and orientations for optimized crystal harvesting and crystallographic data collection.
- B - Thinner polyimide** around the aperture, gives lowest background scatter in all orientations
- C - Wicking Channel and aperture** to draw away excess liquid from your crystal, for faster cooling, smaller mosaicities and lower background (only on MicroMounts™)
- D - Thicker polyimide** in the body, to increase rigidity.
- E - MiTeGen** brand name, indicates the highest quality mounts, each one hand-built, hand-cleaned, and hand-inspected prior to shipping. The label also aids as an orientation guide to the front and back of the mount
- F - Patented curvature** of the polymer tip around the steel rod maximizes mount rigidity, minimizes vibrations, and gives a scoop-like design that simplifies crystal harvesting.
- G - Beveled, solid non-magnetic stainless steel rods** for maximum sample visibility during harvesting, compatible with all commercial goniometer bases (caps) and with MiTeGen's patented reusable bases.
- H - Aperture size** in micrometers can be read directly.
- I - Alignment cross** provides a repeatable reference point of fixed dimension to the center of the aperture.
- J - Sample aperture size code** for automated recognition of mount design and aperture size.

MiTeGen Mount Selection

				Design					
Style	Applications	Typical Crystal sizes (μm)	Aper- tures sizes (μm)	Thicknesses (μm)			Cat. No.s	Starting at (per 20)	Page
				Aper- ture (μm)	Details & labels (μm)	Body (μm)			
Dual-Thickness MicroMounts™	General purpose mount with wicking aperture; for low background X-ray scatter from medium to small crystals.	10 - 300	10 - 200 (see below)	10	10	25	M2-Lxx-xx	\$99	10
Dual-Thickness MicroLoops LD™	General purpose mount with long narrow neck for low drop disturbance during harvesting of medium to small crystals from small drops.	20 - 300	20 - 300 (see below)	10	10	25	M5-Lxx-xxLD	\$99	11
Dual-Thickness MicroLoops™	General purpose, robust, economical sample mounts for medium to large crystals.	30 - 1500	50 - 1,000 (see below)	25	10	25	M5-Lxx-xx	\$69	12
MicroLoops E™	Special purpose elliptical apertures for rod and needle shaped crystals	-	-	12.5			M8-Lxx-xx	\$99	13
Dual-Thickness MicroCrystal Mounts™	Special purpose Ultrathin membrane for easier visualization and ultra-low background X-ray scatter, for use with very small crystals.	< 20	-	3	3	10	M4-L18SP-A1	\$115	14
MicroMeshes™	Special purpose mesh filled apertures for plates, rods, and small microcrystals.	any	-	10			M3-Lxx-xx	\$85	15
MicroGrippers™	Special purpose, gentle support for thin plate-like samples and gripping action for robust samples.	50-300	50 - 300	10			M7-Lxx-xx	\$99	16

	Available sizes (μm)													
Dual-Thickness MicroMounts™	10	20	30	50	75	100	150	200						
Dual-Thickness MicroLoops LD™		20	35	50	75	100	150	200	300					
Dual-Thickness MicroLoops™				50		100	150	200	300	400	500	600	800	1000

Strength where you need it, ...

X-ray and visual clarity where it matters most.

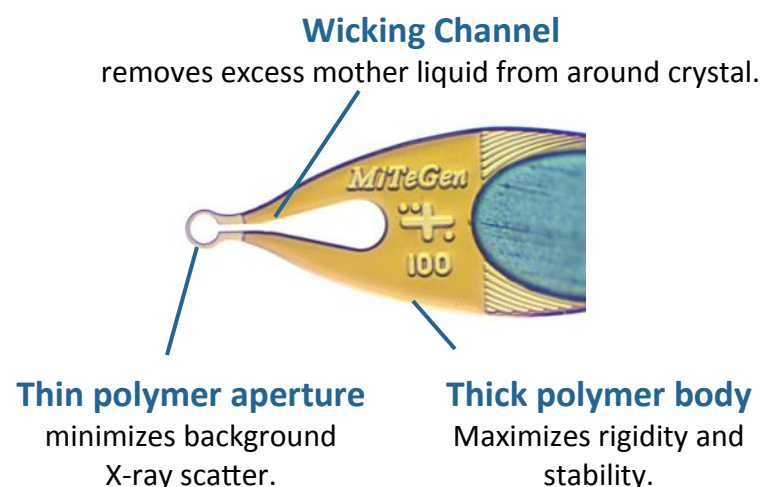
“Dual-Thickness” MicroMounts™, MicroLoops™, MicroLoops LD™, and MicroCrystal Mounts™ are designed and manufactured with a unique Dual-Thickness process developed at MiTeGen that:

- minimizes polymer thickness near the sample, and maximizes it in the mount body
- eliminates through-holes that trap liquid and concentrate stress in the mount body
- facilitates curving of the thick polymer body into Mitegen's patented scoop-like design

Look to Mitegen's Dual-Thickness products for an unequalled balance of robustness, ease of use, sample and aperture visibility, and X-ray performance.

Dual-Thickness MicroMounts™

**Get less background scatter from excess mother liquid
with the innovative wicking channel**



Benefits

- ✓ Low background scatter
- ✓ Minimal surrounding liquid
- ✓ Faster cooling
- ✓ reduced mosaicity
- ✓ Ideal combination of rigidity and flexibility
- ✓ Easy crystal harvesting
- ✓ Visible aperture size

Our most popular models

Description	QNTY	Rod Length*	Cat. No.	Price
10 µm aperture Dual-Thickness MicroMounts™	20	18 mm	M2-L18SP-10	\$99
20 µm aperture Dual-Thickness MicroMounts™	20	18 mm	M2-L18SP-20	\$99
30 µm aperture Dual-Thickness MicroMounts™	20	18 mm	M2-L18SP-30	\$99
50 µm aperture Dual-Thickness MicroMounts™	20	18 mm	M2-L18SP-50	\$99
75 µm aperture Dual-Thickness MicroMounts™	20	18 mm	M2-L18SP-75	\$99
100 µm aperture Dual-Thickness MicroMounts™	20	18 mm	M2-L18S-100	\$99
150 µm aperture Dual-Thickness MicroMounts™	20	18 mm	M2-L18SP-150	\$99
200 µm aperture Dual-Thickness MicroMounts™	20	18 mm	M2-L18SP-200	\$99
Small Aperture Assortment 5 each of 10, 20, 30 and 50 µm aperture Dual-Thickness MicroMounts™	20	18 mm	M2-L18SP-A1	\$99
Medium Aperture Assortment 5 each of 75, 100, 150 and 200 µm aperture Dual-Thickness MicroMounts™	20	18 mm	M2-L18SP-A2	\$99

Applications

Cryogenic and room temperature crystallography on samples from 10 µm to ~350 µm where removal of mother liquid and ultra low

Features

- Patented curved mount design
- Dual-Thickness, strong yet thin construction
- Wicking channel to remove excess liquid
- Precise dimensions for ease of alignment
- Compatible with standard X-ray hardware

Specifications

Material	Polyimide
Apertures	10, 20, 30, 50, 75, 100, 150, 200 µm
Thickness	10 µm at aperture 25 µm in body

Sizing Tip

For ease of harvest and to minimize excess liquid, harvest using an aperture that is similar to or slightly smaller than your crystal size.



Tech Tip:
Maximizing Diffraction
Signal to Noise

**Note: Data and pricing for standard 18 mm / SPINE length rods.
All products are available on non-standard rod lengths of 11, 19, and 25 mm. Contact MiTeGen for details.*

Learn more and order online at MiTeGen.com



Get the smallest drop disturbance with our advanced loop design

Applications

Cryogenic and room temperature crystallography on samples from ~ 15 µm to ~400 µm where low drop disturbance for ease of harvesting, and ultra low background scatter is desired.

Features

- Patented curved mount design
- Dual-Thickness, rigid yet thin construction
- Long thin neck
- Precise dimensions for ease of alignment
- Compatible with standard X-ray hardware

Specifications

Material	Polyimide
Apertures	20, 35, 50, 75, 100, 150, 200 and 300 µm
Thickness	10 µm at aperture 25 µm in body

Sizing Tip

For ease of mounting and reduction of excess fluids, harvest using an aperture that is similar to or slightly smaller than your crystal size.

Long Thin Neck

Results in less drop disturbance and ease of harvesting



Thin polymer aperture
minimizes background
X-ray scatter.

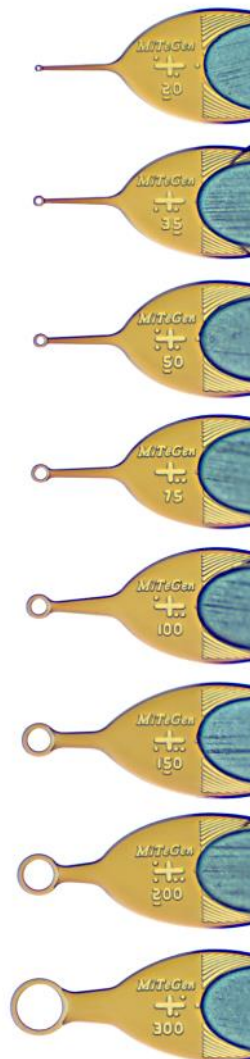
Thick polymer body
Maximizes rigidity
and stability.

Benefits

- ✓ Ease of harvest
- ✓ Low drop disturbance
- ✓ Visible aperture size
- ✓ Low vibration
- ✓ Low background scatter

Our most popular models

Description	QNTY	Rod Length*	Cat. No.	Price
20 µm aperture MicroLoops LD™	20	18 mm	M5-L18SP-20LD	\$99
35 µm aperture MicroLoops LD™	20	18 mm	M5-L18SP-35LD	\$99
50 µm aperture MicroLoops LD™	20	18 mm	M5-L18SP-50LD	\$99
75 µm aperture MicroLoops LD™	20	18 mm	M5-L18SP-75LD	\$99
100 µm aperture MicroLoops LD™	20	18 mm	M5-L18SP-100LD	\$99
150 µm aperture MicroLoops LD™	20	18 mm	M5-L18S-150LD	\$99
200 µm aperture MicroLoops LD™	20	18 mm	M5-L18SP-200LD	\$99
300 µm aperture MicroLoops LD™	20	18 mm	M5-L18SP-300LD	\$99
Small Aperture Assortment 5 each of 20, 35, 50 and 75 µm aperture MicroLoops LD™	20	18 mm	M5-L18SP-A1LD	\$99
Medium Aperture Assortment 5 each of 100, 150, 200, and 300 µm aperture MicroLoops LD™	20	18 mm	M5-L18SP-A2LD	\$99



*Note: Data and pricing for standard 18 mm / SPINE length rods.

All products are available on non-standard rod lengths of 11, 19, and 25 mm. Contact MiTeGen for details.

Tech Tip:
Handling and
Mounting Small
Samples



Dual-Thickness MicroLoops™

General purpose, economy mount, optimized for maximum durability and rigidity

IMPROVED DESIGN !
Thicker polymer throughout



Applications

General purpose cryo and room-temperature crystallography on 50 micron and larger samples, where durability is important .

X-ray and Neutron diffraction

Features

- Thick polymer in both the body and aperture
- No through-holes
- Patented curved mount design
- Precise dimensions for ease of alignment
- Wide range of sizes
- Compatible with standard X-ray hardware

Benefits

- ✓ Economical
- ✓ Robust
- ✓ Rigid
- ✓ Ultra Low Vibration
- ✓ Ease of Harvest
- ✓ Visible aperture size

Our most popular models

Specifications

Material	Polyimide
Apertures	50, 100, 150, 200, 300, 400, 500, 600, 800 and 1000 μm
Thickness	25 μm at aperture 18 - 25 μm in body

Description	QNTY	Rod Length*	Cat. No.	Price
50 μm aperture Dual-Thickness MicroLoops™	20	18 mm	M5-L18SP-50	\$69
100 μm aperture Dual-Thickness MicroLoops™	20	18 mm	M5-L18SP-100	\$69
150 μm aperture Dual-Thickness MicroLoops™	20	18 mm	M5-L18S-150	\$69
200 μm aperture Dual-Thickness MicroLoops™	20	18 mm	M5-L18SP-200	\$69
300 μm aperture Dual-Thickness MicroLoops™	20	18 mm	M5-L18SP-300	\$69
400 μm aperture Dual-Thickness MicroLoops™	20	18 mm	M5-L18SP-400	\$69
500 μm aperture Dual-Thickness MicroLoops™	20	18 mm	M5-L18SP-500	\$69
600 μm aperture Dual-Thickness MicroLoops™	20	18 mm	M5-L18SP-600	\$69
800 μm aperture Dual-Thickness MicroLoops™	20	18 mm	M5-L18SP-800	\$69
1000 μm aperture Dual-Thickness MicroLoops™	20	18 mm	M5-L18SP-1000	\$69
Medium Aperture Assortment 5 each of 50, 100, 150 and 200 μm aperture Dual-Thickness MicroLoops™	20	18 mm	M5-L18SP-A4	\$69
Large Aperture Assortment 5 each of 300, 400, 500, and 600 μm aperture Dual-Thickness MicroLoops™	20	18 mm	M5-L18SP-A5	\$69
Extra-Large Aperture Assortment 10 each of 800 and 1000 μm aperture	20	18 mm	M5-L18SP-A6	\$69



Tech Tip:
Minimizing Sample Motion in Cold Gas Stream

*Note: Data and pricing for standard 18 mm / SPINE length rods.
All products are available on non-standard rod lengths of 11, 19, and 25 mm. Contact MiTeGen for details.

Learn more and order online at [MiTeGen.com](https://www.MiTeGen.com)



Specialty mounts for needle or rod shaped crystals

Applications

Cryogenic and room temperature crystallography on needle and rod-shaped crystals

Features

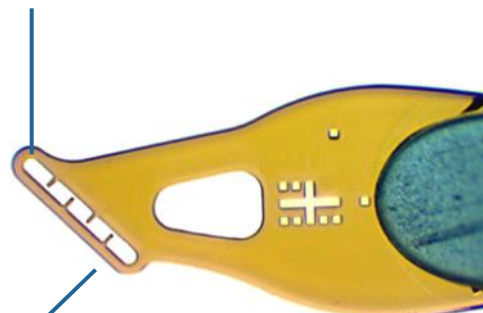
- Aperture shape matches crystal shape
- Small fingers within the aperture provide delicate support
- Three aperture orientations for most efficient data collection
- Patented curved mount design
- Precise dimensions for ease of alignment
- Compatible with standard X-ray hardware

Specifications

Material	Polyimide
Apertures	8 styles available
Thickness	12.5 µm

Delicate support for needle and rod shaped crystals

Orients crystal to The desired angle



Benefits

- ✓ Ease of Harvest
- ✓ Minimal surrounding liquid
- ✓ Low Background scatter
- ✓ Less crystal bending
- ✓ Reduced mosaicity
- ✓ Easy sample orientation
- ✓ More efficient data collection

Our most popular models

Description	QNTY	Rod Length*	Cat. No.	Price
MicroLoops E™ - Vertical Assortment 5 each of 15x150, 30x300, 50x500, and 70x700 Vertical MicroLoops E™	20	18 mm	M8-L18SP-VA1	\$99
MicroLoops E™ - Horizontal Assortment 10 each of 15x150, and 50x500 Horizontal MicroLoops E™	20	18 mm	M8-L18SP-HA1	\$99
MicroLoops E™ - Inclined Assortment 10 each of 15x150, and 50x500 Inclined MicroLoops E™	20	18 mm	M8-L18SP-IA2	\$99

Customized box assortments available.

Please contact us: info@mitegen.com

*Note: Data and pricing for standard 18 mm / SPINE length rods.

All products are available on non-standard rod lengths of 11, 19, and 25 mm. Contact MiTeGen for details.

Tech Tip:
Handling and
Mounting Needle and
Rod Shaped Crystals



Dual-Thickness MicroCrystal Mounts™

**Ultra-thin membranes for easy visualization
and lowest background X-ray scatter**



Ultra-thin Membrane

For unparalleled visibility of MicroCrystals



Thicker outer ridge and body
For support

Applications

Cryogenic and room temperature crystallography
on MicroCrystal samples less than 20 µm in size

Features

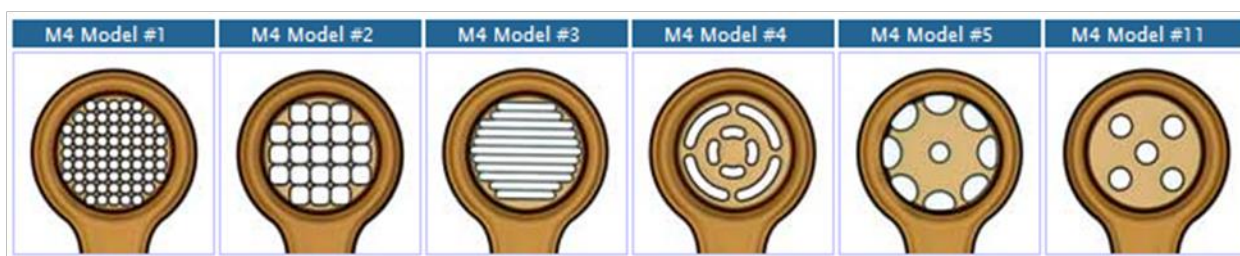
- Patented curved mount design
- Dual-Thickness, rigid yet thin construction
- Ultra-thin 3 µm membrane
- Precise dimensions for ease of alignment
- Compatible with standard X-ray hardware

Benefits

- ✓ Ease of harvest of MicroCrystals
- ✓ Ease of visualization of MicroCrystals
- ✓ Visible aperture size
- ✓ Ultra-low background scatter

Specifications

Material	Polyimide
Apertures	Available in 12 designs: Models 1,2,3,4,5,11 have a ridge on the top surface Models 6,7,8,9,10,12 have a smooth top
Thickness	3 µm at aperture 10 µm in body



Description	QNTY	Rod Length*	Cat. No.	Price
MicroCrystal Mounts™ Assortment	20	18 mm	M4-L18SP-A1	\$115
MicroCrystal Mounts™ Individual Designs (Use model #s 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12)	20	18 mm	M4-L18SP-##	\$115

**Note: Data and pricing for standard 18 mm / SPINE length rods.*

All products are available on non-standard rod lengths of 11, 19, and 25 mm. Contact MiTeGen for details.

Widely used for screening and data collection on MicroCrystals

Applications

Cryogenic and room temperature crystallography of challenging samples including:

- MicroCrystals
- Plates
- Needles or Rods

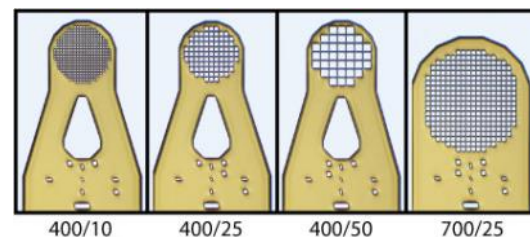
Features

- Patented curved mount design
- Mesh filled apertures
- Precise dimensions for ease of alignment
- Compatible with standard X-ray hardware

Specifications

Material	Polyimide
Mesh apertures	10, 25, and 50 μm
Mesh area	400 and 700 μm
Thickness	10 μm

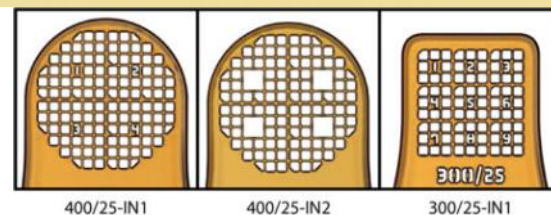
Original MicroMeshes™



Benefits

- ✓ Easy retrieval via sieving action
- ✓ Continuous support
- ✓ Low background scatter
- ✓ Mount multiple crystals

Indexed MicroMeshes™



Specifications

Material	Polyimide
Mesh apertures	25 μm
Mesh area	300 and 400 μm
Thickness	10 μm

Benefits

- ✓ Index marks simplify locating each crystal
- ✓ Square tip aids in “shoveling” crystals from well bottoms

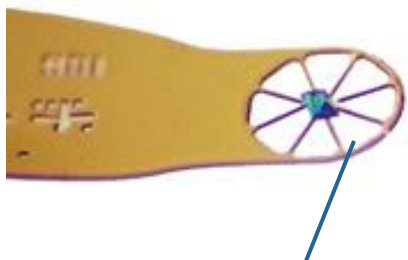


	Description	QNTY	Rod Length*	Cat. No.	Price
	Assortment, 5 each of 400/10, 400/25, 400/50 and 700/25 μm MicroMesh™ Mounts	20	18 mm	M3-L18SP-A1	\$80
	400/10 MicroMesh™ Mounts	20	18 mm	M3-L18SP-10	\$80
	400/25 MicroMesh™ Mounts	20	18 mm	M3-L18SP-25	\$80
	400/50 MicroMesh™ Mounts	20	18 mm	M3-L18SP-50	\$80
	700/25 MicroMesh™ Mounts	20	18 mm	M3-L18SP-25L	\$80
	80/15 MicroMesh™ Mounts	20	18 mm	M3-L18SP-15	\$90
INDEXED	400/25-IN1 MicroMesh™ Mounts	20	18 mm	M3-L18SP-400/25IN1	\$90
	400/25-IN2 MicroMesh™ Mounts	20	18 mm	M3-L18SP-400/25IN2	\$90
	300/25-IN1 MicroMesh™ Mounts	20	18 mm	M3-L18SP-300/25IN1	\$90

*Note: Data and pricing for standard 18 mm / SPINE length rods.

All products are available on non-standard rod lengths of 11, 19, and 25 mm. Contact MiTeGen for details.

Unique design gently supports or grips your sample



Thin polymer fingers

Slide the fingers beneath plates or rods for the most delicate, stress-free support, or push down on larger samples to gently grip and immobilize them

Benefits

- ✓ Gentle support
- ✓ Low stress and mosaicity
- ✓ Grip chunky crystal without damaging
- ✓ Low background scatter
- ✓ Visible aperture size

Applications

Cryogenic and room temperature crystallography on samples larger than 50 microns.

Features

- Patented curved mount design
- Patented narrow polymer fingers
- Precise dimensions for ease of alignment
- Compatible with standard X-ray hardware

Specifications

Material	Polyimide
Apertures	50, 100, 200 and 300 μm
Thickness	10 μm

Sizing

Harvest using an aperture that is slightly smaller than your crystal size.



Our most popular models

Description	QNTY	Rod Length*	Cat. No.	Price
Assortment, 5 each of 50,100, 200, and 300 μm MicroGripper™ Mounts	20	18 mm	M7-L18SP-A1	\$99
50 μm aperture MicroGripper™ Mounts	20	18 mm	M7-L18SP-50	\$99
100 μm aperture MicroGripper™ Mounts™	20	18 mm	M7-L18SP-100	\$99
200 μm aperture MicroGripper™ Mounts	20	18 mm	M7-L18SP-200	\$99
300 μm aperture MicroGripper™ Mounts	20	18 mm	M7-L18SP-300	\$99



Tech Tip:
Reducing the Mosaicity
of Flash-Cooled
Crystals

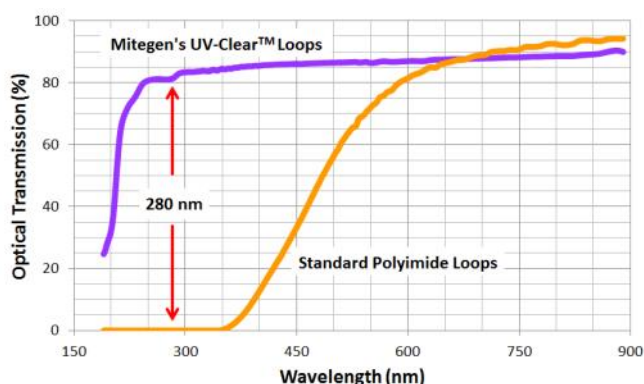
**Note: Data and pricing for standard 18 mm / SPINE length rods.*

All products are available on non-standard rod lengths of 11, 19, and 25 mm. Contact MiTeGen for details.

Learn more and order online at MiTeGen.com

UV-Vis Mounts

100 μ m
diameter
aperture



Customized box assortments available.
Please contact us: info@mitegen.com

Applications:

- ✓ X-Ray Crystallography
- ✓ UV-Vis spectroscopy
- ✓ Raman spectroscopy
- ✓ Crystal detection by:
 - ✓ Fluorescence imaging
 - ✓ Two-photon imaging
 - ✓ Second harmonic generation (SHG) imaging

Observation of:

- ✓ reaction intermediates and products
- ✓ changes in oxidation state of metal ions
- ✓ radiation damage

Description	Cat. No.	Price
UV-VIS™ Mounts Sampler Kit (3 styles, 12 mounts total, on 18 mm pins)	MUV-L18SP-S1	\$120

Other Options

Angled-Tip Option	High-Angle Diffraction	Non-Standard Rod Lengths
<p>Available for MicroMounts™, Micro-Loops™, and MicroMeshes™</p> <p>The tip of the mount is angled relative to the rod and rotation axis by 45° or 90° +/- 5°. Reduce spot overlap.</p> <p>See Catalog # CA-45 and CA-90 below</p>	<p>An extra ~20% of clearance length from the sample to the metal rod. Especially for very high angle diffraction on wide beam sources</p> <p>See Catalog # HAD-1 below</p>	<p>All mounts are stocked and sold on 18 mm rods as standard. 11 mm, 19 mm, and 25 mm pins also available</p> <p>Non standard lengths can be ordered online</p>

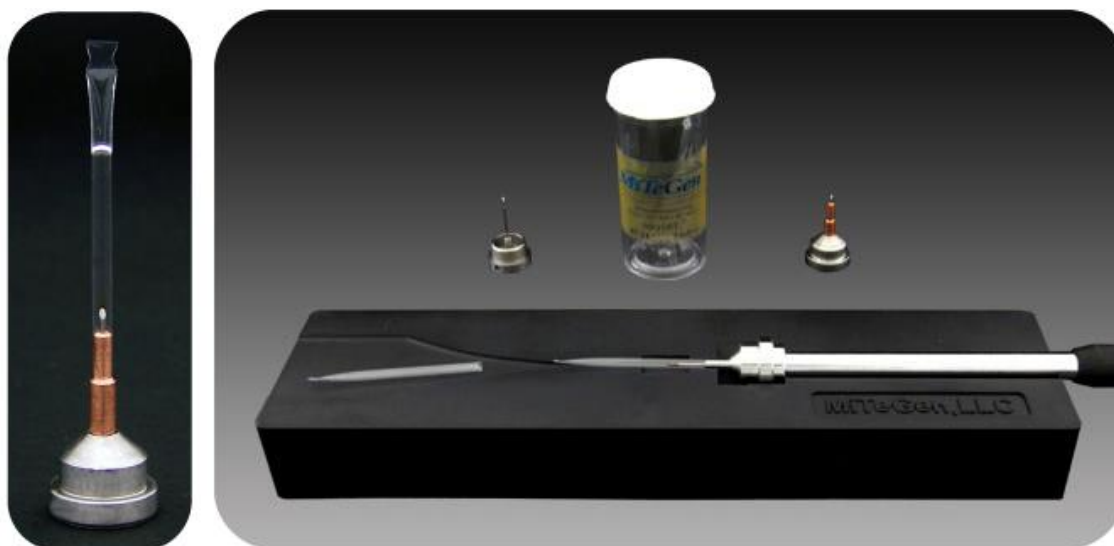
Description	Cat. No.	Price
Changed orientation of crystal mounts to ~45 ° angle, modification to 1 box of 20 mounts/loops/meshes (mounts ordered separately)	CA-45	\$35
Changed orientation of crystal mounts to ~90 ° angle, modification to 1 box of 20 mounts/loops/meshes (mounts ordered separately)	CA-90	\$35
High Angle Diffraction option modification to 1 box of 20 mounts/loops/meshes	HAD-1	\$35

Tech Tip:
Handling and
Mounting Needle and
Rod Shaped Crystals



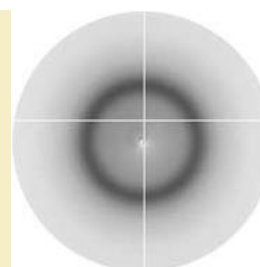
Room temperature crystallography has never been easier

MiTeGen's patented **MicroRT™ capillary system** is the answer for room temperature diffraction screening and data collection. Flexible, transparent thin-walled polymer capillaries that allow you to go from a crystal in a drop to a crystal in the X-ray beam at room temperature quickly. Collect room and low temperature data from the same crystal to evaluate your crystal and cryopreservation protocol. Solve your protein's structure at room temperature to see biologically important conformations that may be lost during freezing. Use saturated salt solutions to controllably dehydrate crystals and improve their order.

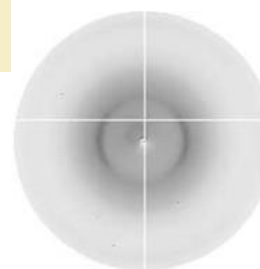


MicroRT System Benefits

- ✓ Foolproof harvesting and room temperature data collection
- ✓ Get crystals from drop to beam before optimization and cryoprotection
- ✓ Capillaries are unbreakable
- ✓ Capillaries can be cut to desired length easily with scissors
- ✓ Capillaries are presealed at one end
- ✓ 60% less X-ray scatter than quartz capillaries
- ✓ 40% less X-ray scatter than borosilicate capillaries
- ✓ Super fast alignment using our MicroRT™ Aligner



10 µm quartz capillary



MicroRT™ capillary

The MicroRT System has three parts:

- ① MicroRT Capillaries:** These flexible, transparent thin-walled polymer capillaries are pre-sealed at one end. They don't break, are easy to handle and produce less background scatter than quartz capillaries. Fill with mother liquor, reservoir solution or a saturated salt solution using a gel-loading pipette tip, then slide past your crystal and onto a Mitegen goniometer base.
- ② MiTeGen Goniometer Bases:** All of our bases are designed to tightly mate with the MicroRT capillaries.
- ③ MicroRT Aligner:** This simple tool makes sliding the MicroRT capillaries past your crystal and onto the goniometer base a breeze. No need to use a microscope or magnifier and no worries about shaky hands causing you to bump your crystal.



Tech Tip:
Using the MicroRT
System for Room and
Low Temperature
Crystallography

Learn more and order online at MiTeGen.com

Why collect diffraction data at room temperature?

Screen your crystals at room temperature first, and save time that could be wasted optimizing, cryoprotecting and measuring crystals that don't diffract to begin with.

A large number of low-temperature data sets collected at synchrotrons don't yield structures. If your crystal doesn't diffract well at T=100 K, you have to check its diffraction at room temperature to determine the cause: poor as-grown crystal quality, soaking, cooling, etc.

In addition, room temperature structures often show functionally important details that are lost on cooling.

The **MicroRT System** provides an extremely cost effective tool for increasing the efficiency of your crystal to structure pipeline.

Description	Cat. No.	Price
MicroRT™ Room Temperature Starter Kit	RTSK-1	\$300
MicroRT™ Tubing Kit	RT-T1	\$50
MicroRT™ Aligner	RTA-1	\$80
Gel Loading pipette tips (pkg of 200 tips)	GLPT-1	\$40

Jena Bioscience Crystal Dehydration and Salvage Kits

Dehydration removes excess solvent, tightens packing of protein molecules, and reduces the size of solvent channels. As a result, it sometimes improves crystal order and diffraction resolution. By removing excess solvent, dehydration can make successful flash cooling easier, especially for crystals with large initial solvent contents.

When sufficiently dehydrated, many protein crystals undergo structural transformations, yielding alternative crystal packings that may be difficult or impossible to achieve directly during crystal growth. Of all post-crystallization treatments, dehydration has proven to be the most effective in improving crystal diffraction properties.

Dehydration Salts and the **Crystal Dehydration and Salvage Kit** have been designed for an easy, controlled and reliable way to dehydrate protein crystals and thus provide an efficient tool for altering / improving their diffraction properties.



Description	Cat. No.	Price
Dehydration Salts, 1 kit	MCO-121	\$147
Crystal Dehydration and Salvage Kit, with 6 MiTeGen GB-B3S goniometer bases	MCO-122	\$201
Crystal Dehydration and Salvage Kit, with 6 MiTeGen GB-B3S-R Reusable goniometer bases	MCO-122-R	\$236

Tech Tip:
Maximize the
Productivity in Your
Crystallography Lab



Goniometer Bases (Caps)

Goniometer bases (sometimes called "caps") are used to hold MicroMounts™, MicroLoops™, Micromeshes™ and Micro Grippers™ in X-ray crystallography and related applications. MiTeGen's bases are compatible with all other loop mounts, with standard cryotools, with MiTeGen's magnetic CryoVials, and with all magnetic goniometer head mounts and sample automounting hardware. Unlike other available bases, our patented designs tightly capture the MicroRT™ capillaries to allow easy and seamless room-temperature and low-temperature data collection.

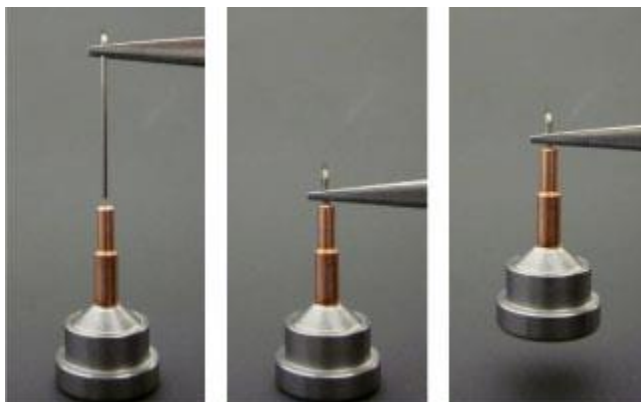


Be sure to check out the information about our Beamline Guide on page: 7




MiTeGen Base Styles

Patented design compatible with MicroRT tubing. They do require glue.

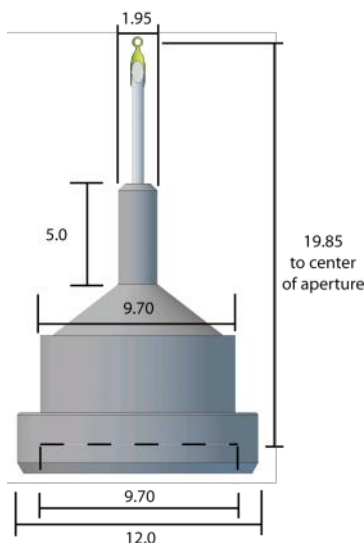


MiTeGen Reusable Bases

 Our most popular models

		Standard bases Without CryoVials	Standard bases With CryoVials	<u>Reusable</u> bases Without CryoVials	<u>Reusable</u> bases With CryoVials	
MiTeGen Model	Compatible Automated Systems	Cat No	Cat No	Cat No	Cat No	Page
B1	SAM, SPACE,	GB-B1-XXX	GBV-B1-XXX	GB-B1-R-XXX	GBV-B1-R-XXX	18
B3		GB-B3-XXX	GBV-B3-XXX	GB-B3-R-XXX	GBV-B3-R-XXX	19
B1A	ALS, SAM ACTOR and others	GB-B1A-XXX	GBV-B1A-XXX	GB-B1A-R-XXX	GBV-B1A-R-XXX	20
B3S		GB-B3S-XXX	GBV-B3S-XXX	GB-B3S-R-XXX	GBV-B3S-R-XXX	21
B4		GB-B4-XXX				22
B5	SPINE, CATS, SC3 & SPACE	GB-B5-XXX	GBV-B5-XXX	GB-B5-R-XXX	GBV-B5-R-XXX	23

(SSRL/SAM) B1 Style Goniometer Bases



Applications

Cryogenic and room temperature crystallography

B1 Features

- Magnetic stainless steel base
- **Compatible with MicroRT™ capillaries for room temperature screening and crystal dehydration studies**
- Can be used with all crystal mounts/loops, including MicroMounts™, MicroLoops™, MicroGrippers™ and MicroMesh™
- Designed for use with SAM style robotic sample changers
- For use with 18 or 19 mm length rods
- Compatible with magnetic CryoVials

B1-R (Reusable) additional features

- Positive gripping, glue-free reusable design that:
 - Saves time
 - Eliminates waste
 - Facilitates changing mount size to match crystal



Our most popular models

MiTeGen Model	For Use with Rod	Compatible Automated Systems	Type	Without CryoVials			With CryoVials		
				Cat No	QNTY	Price	Cat No	QNTY	Price
B1	18 mm or 19 mm	SAM	STANDARD	GB-B1-10	10	\$60	GBV-B1-10	10	\$80
				GB-B1-20	20	\$110	GBV-B1-20	20	\$148
				GB-B1-40	40	\$200	GBV-B1-40	40	\$272
				GB-B1-100	100	\$475	GBV-B1-100	100	\$645
				GB-B1-500	500	\$2150	GBV-B1-500	500	\$2975
				GB-B1-1000	1000	\$4200	GBV-B1-1000	1000	\$5800
			REUSABLE	GB-B1-R-10	10	\$104.50	GBV-B1-R-10	10	\$124.50
				GB-B1-R-20	20	\$188	GBV-B1-R-20	20	\$226
				GB-B1-R-40	40	\$355	GBV-B1-R-40	40	\$427
				GB-B1-R-100	100	\$835	GBV-B1-R-100	100	\$1005
				GB-B1-R-500	500	\$3950	GBV-B1-R-500	500	\$4775
				GB-B1-R-1000	1000	\$7800	GBV-B1-R-1000	1000	\$9400

B3 Style Goniometer Bases (SSRL)

Applications

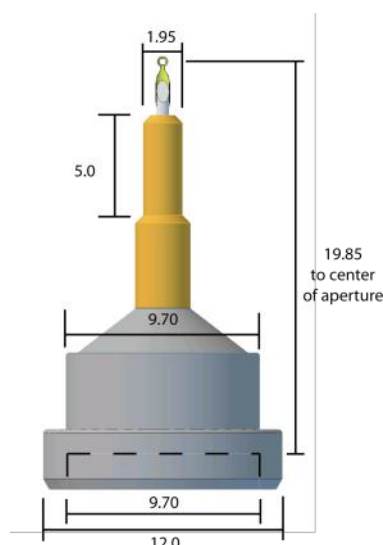
Cryogenic and room temperature crystallography

B3 Features

- Magnetic stainless steel base with copper insert
- **Compatible with MicroRT™ capillaries for room temperature screening and crystal dehydration studies**
- Can be used with all crystal mounts/loops, including MicroMounts™, MicroLoops™, MicroGrippers™ and MicroMesh™
- Designed for use with SAM style robotic sample changers
- For use with 18 mm and 19 mm length rods
- Compatible with magnetic CryoVials
- Secure threaded assembly

B3-R (Reusable) additional features

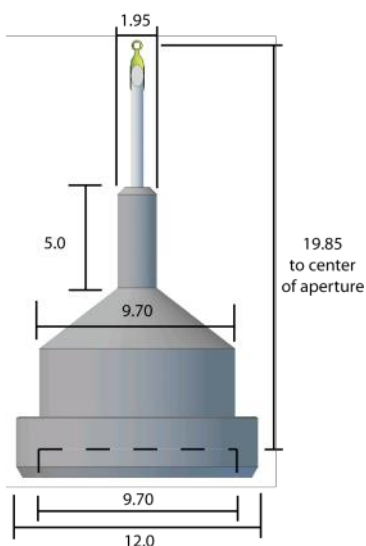
- Positive gripping, glue-free, reusable design that:
 - Saves time
 - Eliminates waste
 - Facilitates changing mount size to match crystal



Our most popular models

MiTeGen Model	For Use with Rod	Compatible Automated Systems	Type	Without CryoVials			With CryoVials		
				Cat No	QNTY	Price	Cat No	QNTY	Price
B3	18 mm or 19 mm	SAM	STANDARD	GB-B3-10	10	\$60	GBV-B3-10	10	\$80
				GB-B3-20	20	\$110	GBV-B3-20	20	\$148
				GB-B3-40	40	\$200	GBV-B3-40	40	\$272
				GB-B3-100	100	\$475	GBV-B3-100	100	\$645
				GB-B3-500	500	\$2150	GBV-B3-500	500	\$2975
				GB-B3-1000	1000	\$4200	GBV-B3-1000	1000	\$5800
			REUSABLE	GB-B3-R-10	10	\$104.50	GBV-B3-R-10	10	\$124.50
				GB-B3-R-20	20	\$188	GBV-B3-R-20	20	\$226
				GB-B3-R-40	40	\$355	GBV-B3-R-40	40	\$427
				GB-B3-R-100	100	\$835	GBV-B3-R-100	100	\$1005
				GB-B3-R-500	500	\$3950	GBV-B3-R-500	500	\$4775
				GB-B3-R-1000	1000	\$7800	GBV-B3-R-1000	1000	\$9400

(ALS) B1A Style Goniometer Bases



Applications

Cryogenic and room temperature crystallography

B1A Features

- Magnetic stainless steel Base
- **Compatible with MicroRT™ capillaries for room temperature screening and crystal dehydration studies.**
- Can be used with all crystal mounts/loops, including MicroMounts™, MicroLoops™, MicroGrippers™ and MicroMesh™
- Designed for use with ALS style robotic sample changers.
- For use with 18 mm and 19 mm length rods.
- Compatible with magnetic CryoVials
- Secure threaded assembly

B1A-R (Reusable) additional features

- Positive gripping, glue-free, reusable design that:
 - Saves time
 - Eliminates waste
 - Facilitates changing mount size to match crystal



Our most popular models

MiTeGen Model	For Use with Rod	Compatible Automated Systems	Type	Without CryoVials			With CryoVials		
				Cat No	QNTY	Price	Cat No	QNTY	Price
B1A	18 mm or 19 mm	ALS, SAM ACTOR and others	STANDARD	GB-B1A-10	10	\$60	GBV-B1A-10	10	\$80
				GB-B1A-20	20	\$110	GBV-B1A-20	20	\$148
				GB-B1A-40	40	\$200	GBV-B1A-40	40	\$272
				GB-B1A-100	100	\$475	GBV-B1A-100	100	\$645
				GB-B1A-500	500	\$2150	GBV-B1A-500	500	\$2975
				GB-B1A-1000	1000	\$4200	GBV-B1A-1000	1000	\$5800
			REUSABLE	GB-B1A-R-10	10	\$104.50	GBV-B1A-R-10	10	\$124.50
				GB-B1A-R-20	20	\$188	GBV-B1A-R-20	20	\$226
				GB-B1A-R-40	40	\$355	GBV-B1A-R-40	40	\$427
				GB-B1A-R-100	100	\$835	GBV-B1A-R-100	100	\$1005
				GB-B1A-R-500	500	\$3950	GBV-B1A-R-500	500	\$4775
				GB-B1A-R-1000	1000	\$7800	GBV-B1A-R-1000	1000	\$9400

B3S Style Goniometer Bases (ALS)

Applications

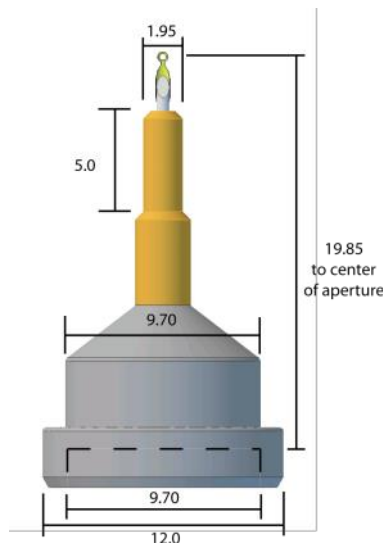
Cryogenic and room temperature crystallography

B3S Features

- Magnetic stainless steel base
- **Compatible with MicroRT™ capillaries for room temperature screening and crystal dehydration studies**
- Can be used with all crystal mounts/loops, including MicroMounts™, MicroLoops™, MicroGrippers™ and MicroMesh™
- Designed for use with ALS style robotic sample changers.
- For use with 18 mm and 19 mm length rods.
- Compatible with magnetic CryoVials
- Secure threaded assembly

B3S-R (Reusable) additional features

- Positive gripping, glue-free, reusable design that:
 - Saves time
 - Eliminates waste
 - Facilitates changing mount size to match crystal



Our most popular models

MiTeGen Model	For Use with Rod	Compatible Automated Systems	Type	Without CryoVials			With CryoVials		
				Cat No	QNTY	Price	Cat No	QNTY	Price
B3S	18 mm or 19 mm	ALS, SAM ACTOR and others	STANDARD	GB-B3S-10	10	\$60	GBV-B3S-10	10	\$80
				GB-B3S-20	20	\$110	GBV-B3S-20	20	\$148
				GB-B3S-40	40	\$200	GBV-B3S-40	40	\$272
				GB-B3S-100	100	\$475	GBV-B3S-100	100	\$645
				GB-B3S-500	500	\$2150	GBV-B3S-500	500	\$2975
				GB-B3S-1000	1000	\$4200	GBV-B3S-1000	1000	\$5800
			REUSABLE	GB-B3S-R-10	10	\$104.50	GBV-B3S-R-10	10	\$124.50
				GB-B3S-R-20	20	\$188	GBV-B3S-R-20	20	\$226
				GB-B3S-R-40	40	\$355	GBV-B3S-R-40	40	\$427
				GB-B3S-R-100	100	\$835	GBV-B3S-R-100	100	\$1005
				GB-B3S-R-500	500	\$3950	GBV-B3S-R-500	500	\$4775
				GB-B3S-R-1000	1000	\$7800	GBV-B3S-R-1000	1000	\$9400

B5 SPINE Style Goniometer Bases

Applications

Cryogenic and room temperature crystallography

B5 Features

- Magnetic stainless steel base
- **Compatible with MicroRT™ capillaries for room temperature screening and crystal dehydration studies**
- Can be used with all crystal mounts/loops, including MicroMounts™, MicroLoops™, MicroGrippers™ and MicroMeshes™
- SPINE Standard
- For use with 18 mm length rods
- Compatible with magnetic CryoVials
- Secure threaded assembly

B5-R (Reusable) additional features

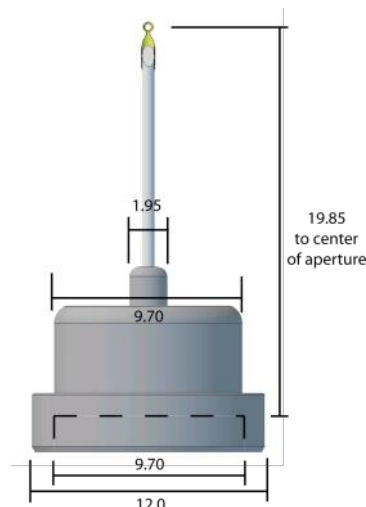
- Positive gripping, glue-Free, reusable design that:
 - Saves time
 - Eliminates waste
 - Facilitates changing mount size to match crystal



Standard



Reusable



Our most popular models

MiTeGen Model	For Use with Rod	Compatible Automated Systems	Type	Without CryoVials			With CryoVials		
				Cat No	QNTY	Price	Cat No	QNTY	Price
B5	18 mm	SPINE, CATS, SC3 & SPACE	STANDARD	GB-B5-10	10	\$60	GBV-B5-10	10	\$80
				GB-B5-20	20	\$110	GBV-B5-20	20	\$148
				GB-B5-40	40	\$200	GBV-B5-40	40	\$272
				GB-B5-100	100	\$475	GBV-B5-100	100	\$645
				GB-B5-500	500	\$2150	GBV-B5-500	500	\$2975
				GB-B5-1000	1000	\$4200	GBV-B5-1000	1000	\$5800
			REUSABLE	GB-B5-R-40	40	\$355	GBV-B5-R-40	40	\$427
				GB-B5-R-100	100	\$835	GBV-B5-R-100	100	\$1005
				GB-B5-R-500	500	\$3950	GBV-B5-R-500	500	\$4775
				GB-B5-R-1000	1000	\$7800	GBV-B5-R-1000	1000	\$9400

B4 Style Goniometer Bases



Applications

Cryogenic and room temperature crystallography

B4 Features

- Brass
- Compatible with MicroRT™ capillaries for room temperature screening and crystal dehydration studies
- Can be used with all crystal mounts/loops, including MicroMounts™, MicroLoops™, MicroGrippers™ and MicroMesh™
- Compatible with all rod lengths



MiTeGen Model	For Use with Rod	Type	Without CryoVials		
			Cat No	QNTY	Price
B4	18 mm or 19 mm	STANDARD	GB-B4-40	40	\$90
			GB-B4-60	60	\$120
			GB-B4-100	100	\$190

Goniometer Head Adapt

Applications

Magnetic adapter to secure magnetic goniometer bases to 3 mm IUCr goniometer heads



Features

- Brass with magnet insert
- Compatible with all standard magnetic Goniometer Bases (Caps)
- Fits most 3 mm pin goniometer heads

Description	Cat No	QNTY	Price
Goniometer head adapter	GHA-1	1	\$39

CUSTOM ADAPTERS AVAILABLE, CONTACT US WITH YOUR NEEDS

Goniometer Base Option: Barcoding



Applications

High throughput crystallography

Barcode Features

- 2D data matrix
- Alphanumeric code

Benefits

- ✓ Guaranteed scanner readable
- ✓ Robust Cermark* engravings doesn't wear off
- ✓ 100% validated readable as per ANSI X3.182, grade B or better
- ✓ Fully compatible with MiTeGen's RT system
- ✓ Available on all MiTeGen Base styles except B4
- ✓ Custom numbering available

**note: Cermark is a registered TradeMark of the Ferro Corporation*

Shop online or contact MiTeGen for pricing

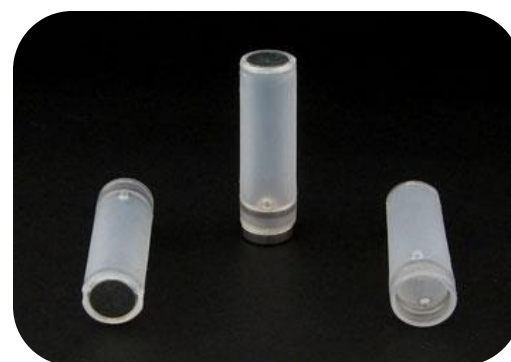
CryoVials

CryoVials help keep your sample cold during transfer from a dewar to a cold gas stream. They also provide protection against sample damage or loss due to sloshing of liquid nitrogen within a storage dewar. MiTeGen's magnetic CryoVials are designed to meet Europe's SPINE standard and are compatible with all earlier cryovial designs used in North America and Asia.

They have a ring magnet at the open end to attach to a goniometer base (cap), and a magnetic steel ballast at the sealed end to attach to SPINE automounters. They are compatible with all of MiTeGen's goniometer bases, all other commercial goniometer bases (not just SPINE bases), with all cryovial handling tools, and with all automounters that require vials.

Applications

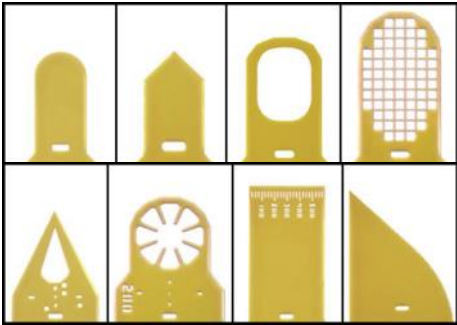
Cryogenic temperature crystallography



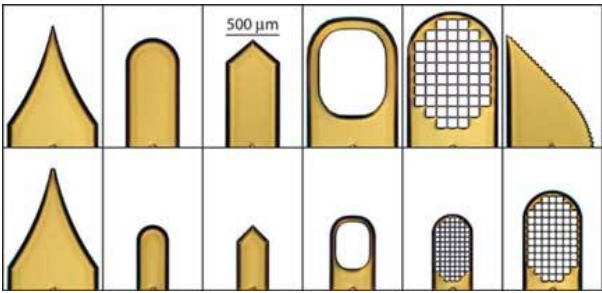
Description	Cat No	QNTY	Price
Magnetic Cryovial (bag of 50)	CV-50	50	\$132
Magnetic Cryovial (bag of 100)	CV-100	100	\$240
Magnetic Cryovial (bag of 200)	CV-200	200	\$435
Magnetic Cryovial (bag of 500)	CV-500	500	\$995

Unique flexible tools for microscopic manipulation, measuring, and cutting.

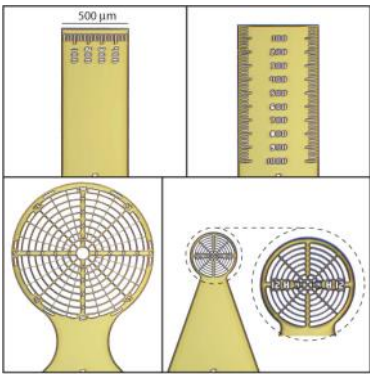
Tool Kit 1



Tool Kit 2



Tool Kit 3



Applications

MicroTools™ are for common sample manipulations and measurements. These tools have tips made from soft, flexible microfabricated polymer films. Tip curvature gives them rigidity, but they can still easily be flexed to conform to a well or slide surface. These tools are far less likely to damage fragile samples than metal microtools, and are optically and X-ray transparent. Use for protein crystals, single cells and other small samples



Each tool is mounted on a 0.025" / 0.64 mm diameter nonmagnetic solid stainless steel rod. Hold them in a standard 0.7 mm mechanical pencil (included with each kit), or in a micromanipulator for easy handling.

Specifications

Material	Polyimide
Thickness	10 & 18 µm for toolkit 1
	18.0 µm for toolkit 2
	10.0 µm for toolkit 3



Learn more at:

MiTeGen.com/MicroTools

Choose:
Kit 1 for optimum X-ray and optical transparency,
Kit 2 for increased durability, and
Kit 3 for common sample measurements.

Our most popular models

Description	QNTY	Rod Length*	Cat. No.	Price
MicroTools™ Kit 1	20	25 mm	T1-L25-A1	\$106
MicroTools™ Kit 2	20	25 mm	T2-L25-A1	\$106
MicroTools™ Kit 3	20	25 mm	T3-L25-A1	\$106

note: 25 mm rods are standard, for MicroTools

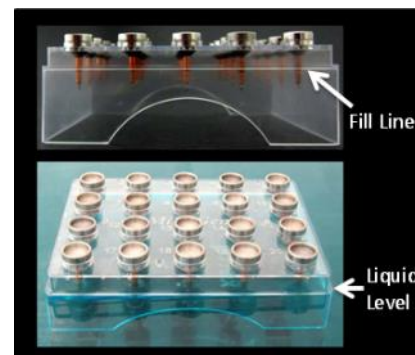
Cleaning Kit & Base Holders

Ideal for storage and cleaning of Mounts/Loops Assemblies

CLEANING KIT INCLUDES:

- (5) base holders and cases
- (1) 4 pound carton of Tergazyme™
- (1) cleaning tray with lid (holds up to 5 baseholders (for up to 100 assemblies))
- Mount use and care instructions

Description	QNTY.	Cat. No.	Price
Base Holders : package of 5 with cases	5	BH-5	\$60
Base Holders : package of 10 with cases	10	BH-10	\$90
Base Holder and Cleaning Kit	1 kit	BHCK-1	\$200



Tweezers

Features

- Stainless Steel Constructions
- Ideal for use with MiTeGen Reusable bases
- Overall length 120 mm
- Serrated Grip



Description	Cat. No.	Price
Serrated end tweezers	TW-1	\$16.50

Apiezon Vacuum Grease

Features

- Silicon-free and halogen-free cryogenic vacuum grease
- Craze-free at cryogenic temperatures
- Improves thermal contact



Description	Cat. No.	Price
Apiezon N Cryogenic Vacuum Grease (25 gram tube)	APZN-1	\$147

Liquid Wicks

Description	QNTY.	Cat. No.	Price
Size 15 tapered wicks	300	W-15	\$16.50
Size XF tapered wicks	300	W-XF	\$16.50
Size F tapered wicks	300	W-F	\$16.50
Size M tapered wicks	300	W-M	\$16.50



ALL-IN-ONE Tool for Beamline or Home Source Set-Up.

Applications

- ✓ Align the sample rotation axis
- ✓ Visualize the X-ray beam
- ✓ Precisely determine beam coordinates
- ✓ Align the sample in the beam
- ✓ Center the beamstop on the beam
- ✓ Calibrate the sample-to-detector distance
- ✓ Calibrate the monochromator energy



Alignment needle for sample rotation axis alignment:

- ✓ Viewable every 90°
- ✓ Internally mounted to prevent damage.
- ✓ <0.5 μm point radius.



Scintillator for beam visualization:

YAG (Ce) crystal for synchrotron beamlines; or
Phosphor for home sources.

Metal Foil (Al) for:

- ✓ Visualizing beam center & beam stop centering.
- ✓ Calibrating the sample-to-detector distance

Description	Cat. No.	Price
VersaPin™ for Beamlines	VersaPin-BL01	\$350
VersaPin™ for Home Sources	VersaPin-HS01	\$275

The VersaPin™ is manufactured and sold by MiTeGen under exclusive license from Argonne National Laboratory. Custom versions available.

Universal Pucks Starter Kits

All the tools you need to get you up-and-running to the beamline



We proudly sell and insist on

Crystal Positioning Systems brand pucks

★ The industries **most trusted source** for Universal Pucks for the past 10 years

★ **Tested and approved** by major synchrotrons and high-throughput labs such as SSRL, ALS, EMBL

🇺🇸 Made in the **USA**

Cat. No.	Description	Kit 1	Kit 2	Kit 3	Kit 3 (2x)	
M-CP-111-021	Universal V1-Puck	7	7	7	14	
M-CP-111-022	Double Puck Loading Dewar with Lid	1	1	1	2	
M-CP-111-026	Puck Wand	1	1	1	2	
M-CP-111-027	Puck Dewar Loading Tool	1	1	1	2	
M-CP-111-028	Puck Separator Tools	1	1	1	2	
M-CP-111-029	Shelved Puck Shipping Cane	1	1	1	2	
M-CP-111-030	Bent Cryo-Tong	1	1	1	2	
TW-CX100	Cryo Express Dry Shipper (CX100)		1	1	2	
TW-CX10-8C00	Shipping case for CX100		1	1	2	
MSK-2	Crystal Harvesting Sampler Kit 2 contains 100 mounts for crystal harvesting and data collection				1	2
GB-B1A-R-120	Reusable Goniometer Bases (120 pieces)				1	2
List Price			\$4,195	\$5,695	\$7,125	\$13,450
Discount		-\$100	-\$200	-\$400	-\$1000	
Price		\$4,095	\$5,495	\$6,725	\$12,450	

CPS Starter Kit Case

CPS Starter Kit Case

- Crack-proof, crush-proof, and shatter –proof
- Watertight and keeps your tools free of dust and debris
- Specially-designed foam to fit CPS items

Cat. No.	Description	Price
M-CP-UPSK-C1	Storage Case for Universal Pucks and Tools	\$300

Universal Pucks, ALS Pucks and Tools



ALS Style
Cat No: M-CP-111-035

Choose either **Universal V1-Pucks** (right) or **ALS Style** (left) Pucks, based on your beamline's automounter requirements.

Each puck holds 16 samples, and comes with free engraving.



Universal V1 Style
Cat No: M-CP-111-021



Shelved Puck Shipping Cane
M-CP-111-029

Shelved Shipping Cane, used to ship and store up to seven (7) ALS or Universal Pucks.



Puck Wand
M-CP-111-026

Puck Separator Tools
M-CP-111-028

Puck Dewar Loading Tool
M-CP-111-027



Double Puck Loading Dewar
M-CP-111-022



Bent Cryo-Tong
M-CP-111-027

Standard tools for handling, loading/unloading and manipulating the two styles of pucks, include the Puck Wand, Separator Tools, Double Puck Loading Dewar, Dewar Loading Tool, and Bent Cryo-Tongs.



Puck Shipping Canister Set
M-CP-111-034

Puck Shipping Canister Set, includes a uni-puck shipping cane, shipping spacers and clip. Used for safe shipping of pucks to synchrotron sources and is compatible with most commercial dry shipping dewars. Holds Up to 7 pucks .

Description	Cat. No.	Price
ALS style puck	M-CP-111-035	\$300
Universal V1 -Puck, 1 puck	M-CP-111-021	\$350
Double Puck Loading Dewar with Lid, 1 dewar	M-CP-111-022	\$275
Puck Shipping Canister Set (New Style), 1 set	M-CP-111-034	\$375
Shelved Puck Shipping Cane (ALS-style), 1 set	M-CP-111-029	\$850
Puck Separator Tools, 1 set	M-CP-111-028	\$300
Puck Dewar Loading Tool, 1 tool	M-CP-111-027	\$140
Puck Wand, 1 tool	M-CP-111-026	\$115
Bent Cryo-Tong, 1 tool	M-CP-111-030	\$115



MiTeGen carries all the equipment needed to collect data at most beamlines. Universal V-1 pucks, ALS pucks, SSRL Cassettes, and the additional tools needed to get your samples securely to the beamline are available.

We proudly sell and insist on **Crystal Positioning Systems** brand pucks

- ★ The industries **most trusted source** for Universal Pucks for the past 10 years
- ★ **Tested and approved** by major synchrotrons and high-throughput labs such as SSRL, ALS, EMBL

 Made in the **USA**

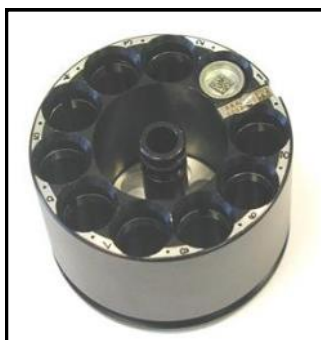
The sample Storage cassette is approved for use with the Stanford Automated Mounting system used at SSRL protein crystallography beam lines.



The Complete Cassette Kit contains all items necessary for shipping samples to the synchrotron for automated data collection. The kit contains a **Sample Storage Cassette**, 96 copper magnetic sample pins, a **Loading Guide Tool**, a **Magnetic Loading and Testing Wand**, a **Dewar Canister**, a **Stryofoam Spacer**, a **Teflon Support Ring**, a **Cassette Transfer Handle**, and a **Foam Dewar**.

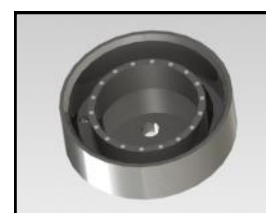
Description	Cat. No.	Price
Complete Cassette Kit (pictured above)	M-CP-111-020	\$2350
Sample Storage Cassette	M-CP-111-011	\$500
Cassette Transfer Handle	M-CP-111-003	\$415
Single Cassette Loading Dewar	M-CP-111-002	\$625
Canister, Styrofoam Spacer and Teflon Ring	M-CP-111-010	\$110
Loading Guide Tool	M-CP-111-005	\$300
Magnetic Loading Wand	M-CP-111-004	\$45
Magnetic Push Button Loading Wand	M-CP-111-025	\$108

SPINE Pucks



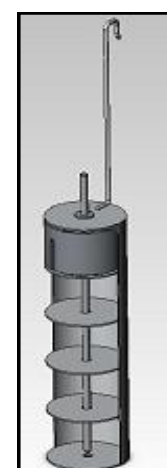
SPINE Puck

These pucks can be loaded with 10 frozen samples mounted on SPINE format holders. Each puck is identified by a unique dot matrix. The SPINE standard is the sample holder format accepted by most of the sample changers available on MX beamlines in Europe, and elsewhere.



Puck Support

Description	Cat. No.	Price
SPINE Puck	M-CSM003-0001A	\$355
Pucks Support, for transfer of SPINE sample holders	M-CSM003-0005A	\$345
Puck holder for lab storage Dewar (updated design)	M-CSM003-0008A	\$376



Puck holder

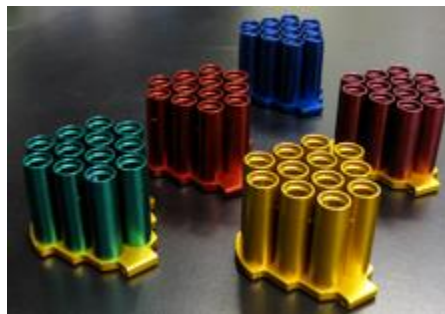
Quick Puck Loader

Applications

The Quick Puck Loader, invented at Toronto's Structural Genomics Consortium, allows you load samples into Rigaku-style pucks quickly and easily, while reducing the potential for mis-seating. Use with standard Rigaku Puck Tongs. No additional tools needed.

Features

- Anodized construction
- Available in 5 colors



IceOff™



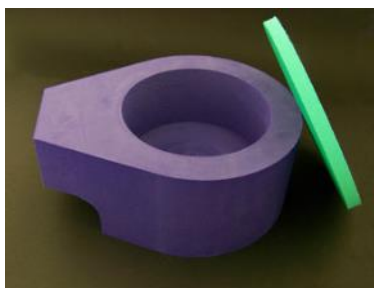
See AP Innovation
videos online at
MiTeGen.com

Liquid Nitrogen Drizzler for removing
Ice/frost from mounted crystal samples



Description	colors	Cat. No.	Price
Quick Puck Loader	Gold/Gold	API-T-001-G/G	\$398
Quick Puck Loader	Gold/Green	API-T-001-G/GN	\$398
Quick Puck Loader	Gold/Red	API-T-001-G/R	\$398
Quick Puck Loader	Red/Red	API-T-001-R/R	\$398
Quick Puck Loader	Blue/Blue	API-T-001-B/B	\$398
IceOff™	-	API-IceOff-01	\$290

Foam Dewars



Standard vessel

(model M-FD-800): Our most popular model, this vessel holds 800 ml of liquid nitrogen.

A replacement for low profile glass dewars, it has superior durability, safety, and thermal insulating properties. The standard vessel shape is circular, with a protruding handle and an insulating lid.



Spearlab



Tall vessel

(model M-TD-1800): The tall vessel replaces upright glass or stainless steel Dewars. Originally designed for short term storage of sample canes containing samples mounted in CryoVials. Includes insulating lid.



Description	Cat. No.	Price
Large vessel—1400 ml	M-FD-1400	\$150
Standard vessel—800 ml	M-FD-800	\$100
Small vessel—500 ml	M-FD-500	\$80
Tall vessel—1800 ml	M-TD-1800	\$175

Taylor Wharton CX Series Dry Shippers and XT series refrigerators



CX & CXR Series

Cryo Express (CX) "dry shippers" are designed to safely transport a variety of materials at cryogenic temperatures. The unique adsorbent material prevents a liquid spill if the unit is tipped over. Storage temperature inside the shipping cavity remains at approximately -190°C until the liquid nitrogen evaporates from the absorbent material

Description	Cat. No.	Price
Cryo Express Dry Shipper (CX100)	TW-CX100	\$925
Cryo Express Dry Shipper with replaceable absorbent Material (CXR100)	TW-CXR100	\$925
Shipping case for CX100 or CXR100	TW-CX10-8C00	\$465
Replaceable Absorbent Material for CXR100	TW-RABM1	\$215



XT Series

The Extended Time Series (XT) of cryogenic refrigerators are designed for long-term storage of a variety of materials at cryogenic temperatures. This series also offers low profile models (XTL), with 5" canisters.



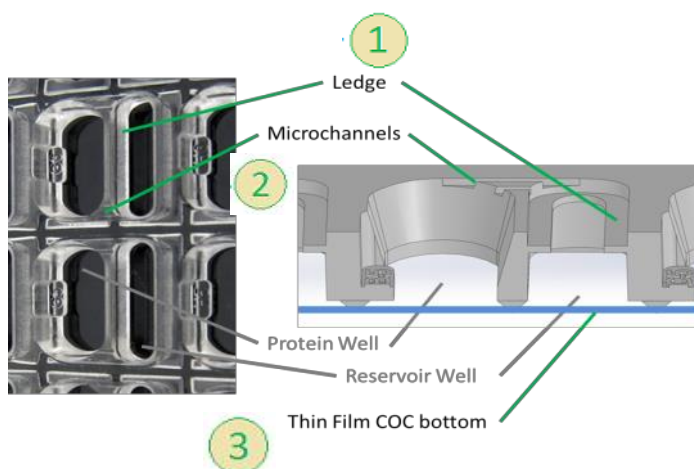
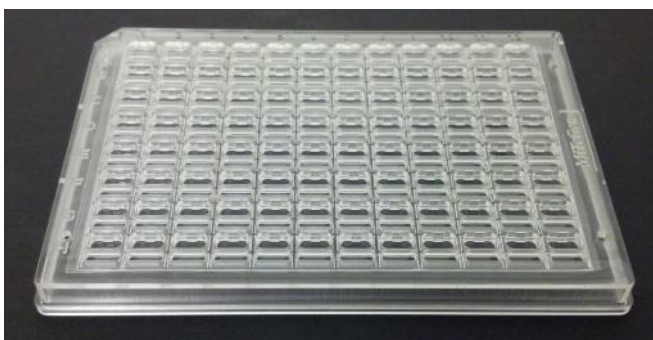
Description	Cat. No.	Price
10 liter Extended Time Refrigerator (XT10)	TW-XT10	\$840
20 liter Extended Time Refrigerator (XT20)	TW-XT20	\$970
34 liter High-Capacity Refrigerator (HC34)	TW-HC34	\$1200
35 liter High-Capacity Refrigerator (HC35)	TW-HC35	\$1428
35 liter Very High-Capacity Refrigerator (VHC35)	TW-VHC35	\$1524
Roller Base (HC34, HC35 & VHC35)	TW-033-8C00	\$226
Cryo-Sentry Level Alarm (HC34)	TW-R034-8C15	\$907
Cryo-Sentry Level Alarm (HC35)	TW-R037-8C15	\$907
Cryo-Sentry Level Alarm (VHC35)	TW-R036-8C30	\$907
Modified Puck Storage Cane (Holds 7 Uni-pucks)	M-CP-111-034C	\$375





in situ-1™ Crystallization Plate

- Improve your **crystallization hit rates**
- See crystals clearly with **greater optical, UV and X-ray transparency**
- **Transport your samples safely** to the synchrotron
- Learn about the **quality of crystals** before harvesting



1 Special ledges within the reservoirs that:

- Force fluid to fill reservoir evenly
- Keep fluid away from top sealing film
- Utilizes surface tension to allow for more fluid in a shorter reservoir
- Inhibits fluid transfer out of the reservoir area during shipping or rough handling

2 Small microchannels connecting the reservoir and sample growth area

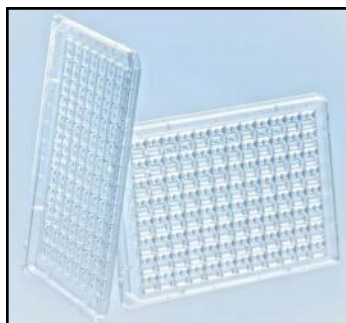
- Allow for vapor diffusion
- Further inhibition of fluid transfer during shipping or rough handling

3 A thin-film COC bottom for excellent X-ray and UV transparency



- ✓ 96 Well
- ✓ SBS format
- ✓ Low Profile
- ✓ Sitting OR Hanging Drop
- ✓ 40 μ l Reservoir Capacity

Description	Quantity	Cat. No.	Price
<i>in situ</i> -1™ Crystallization Plates	20	InSitu-01CL-20	\$210
	40	InSitu-01CL-40	\$396
	100	InSitu-01CL-100	\$970



CrystalQuick™ X

- Visible, polarized and UV-light ready for crystal analysis
- Inclined wells and small well depth for easy harvesting
- Alphanumeric well numbering
- 2 crystallization wells per reservoir = 192 samples per plate
- ANSI/SBS 1-2004 standard

Description	Quantity	Cat. No.	Price
CrystalQuick™ X	80	M-609890	\$680



X-CHIP Starter Kit F6



- Streamlines and expedites the crystallization to data acquisition progression
- No need to mount crystals
- Data acquisition from multiple crystals in the same drop
- No need for cryo-protection
- Low mosaic spread
- Minimizes use of crystallization solutions
- Each Starter Kit includes X-CHIPSS mounted on metals bases packaged on a platform with a cover

Description	Quantity	Cat. No.	Price
X-CHIP Starter Kit F6	8	M-XC-SK-F6A	\$300
X-CHIP Starter Kit F24	4	M-XC-SK-F24A	\$300



X-CHIP Starter Kit F24

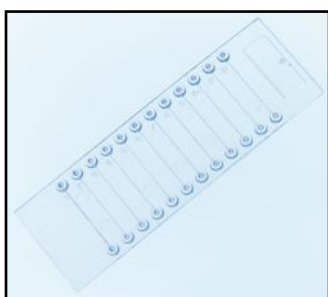


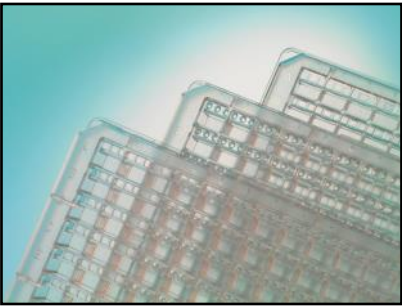
greiner bio-one

CrystalSlide™ is well suited for *in situ* X-ray analysis and crystal analysis with polarized or UV-light

- Low Birefringence
- UV and X-ray transmissible
- Slide dimensions: 75 x 25 mm
- 12 channels per slide
 - Channel dimensions (LxWxH): 20 x 0.1 x 0.1 mm
 - Channel volume: 200 ul

Description	Quantity	Cat. No.	Price
CrystalSlide™	20	M-444820	\$490





- ⇒ 3 sample wells
- ⇒ Sample well volume: 4.1 μ l
- ⇒ 1 reservoir well
- ⇒ Reservoir well volume: 320 μ l



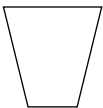
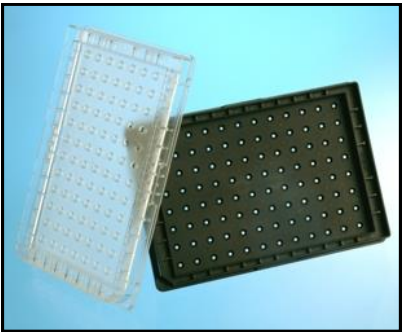
- ⇒ 1 sample wells
- ⇒ Sample well volume: 3.9 μ l
- ⇒ 1 reservoir well
- ⇒ Reservoir well volume: 140 μ l



CrystalQuick™ Plus plates feature a hydrophobic surface to maintain drop formation.

CrystalQuick™ Microplates

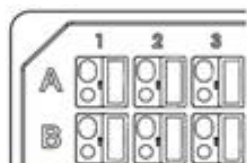
Description	Well layout	Features	Qty	Cat. No.	Price
CrystalQuick™ Microplate		• Defined well positions	40	M-609101	\$360
		• Low birefringence	40	M-609801	\$480
		• Concave well-bottom for easy harvesting • Low birefringence	40	M-609820	\$480
		• Low profile	80	M-609171	\$720
		• Low birefringence • Low profile	80	M-609871	\$840
CrystalQuick™ Plus Microplate		• Hydrophobic surface	40	M-609130	\$360
		• Hydrophobic surface • Low profile	80	M-609180	\$720
		• Hydrophobic surface • Low birefringence	40	M-609830	\$480



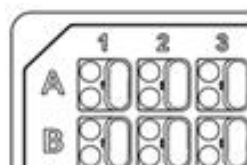
IMP@CT™ Microplate: Designed for microbatch applications under oil

- Centrally localize crystallization drops with conical wells
- Monitor crystallization process with flat well bottoms
- Fill wells separately or together with double-rimmed plate edges
- Control water evaporation by filling the double rim with an aqueous gel
- **Black color** with transparent bottoms for fluorescence measurements
- Max. well volume: 8.0 μ l
- Well bottom diameter: 1.33 mm
- Height: 14.4 mm

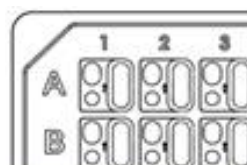
Description	Qty	Cat. No.	Price
IMP@CT™ Microplate (Black)	40	M-673096	\$440
IMP@CT™ Microplate	40	M-673101	\$400
IMP@CT™ Microplate Lids	40	M-656190	\$20.00



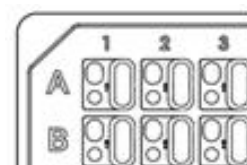
Catalog #: 102-0011-00
Original INTELLI-PLATE



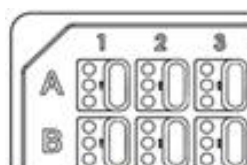
Catalog #: 102-0001-20
96-2 Shallow well



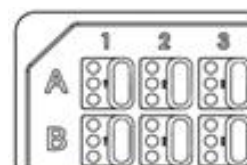
Catalog #: 102-0001-00
96-2 Low volume reservoir



Catalog #: 102-0001-10
96-2 Low profile



Catalog #: 102-0001-13
96-3 low profile INTELLI-PLATE



Catalog #: 102-0001-03
96-3 Low volume reservoir

All Art Robbins Instruments 96 well plates are arranged in an 8 x 12 array.

Original INTELLI-PLATE® 96-2

- One reservoir well: 300µl
- Two sample wells: 4µl and 10µl

Description	Quantity	Cat. No.	Price
Original INTELLI-PLATE® 96-2	120	102-0011-00	\$960

INTELLI-PLATE® 96-2 Shallow Well

- One reservoir well: 100µl
- Two sample wells: both 2µl

Description	Quantity	Cat. No.	Price
INTELLI-PLATE® 96-2 Shallow well	120	102-0001-20	\$960

INTELLI-PLATE® 96-2 Low volume reservoir

- One reservoir well: 100µl
- Two sample wells: 4µl and 10µl

Description	Quantity	Cat. No.	Price
INTELLI-PLATE® 96-2 Low volume reservoir	120	102-0001-00	\$960

INTELLI-PLATE® 96-2 Low Profile

- One reservoir well: 100µl
- Two sample wells: 4µl and 10µl
- Low profile for compact storage

Description	Quantity	Cat. No.	Price
INTELLI-PLATE® 96-2 Low Profile	120	102-0001-10	\$960

INTELLI-PLATE® 96-3 Low Profile

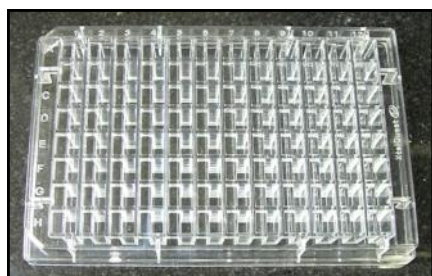
- One reservoir well: 100µl
- Three sample wells: all 1µl
- Low profile for compact storage

Description	Quantity	Cat. No.	Price
INTELLI-PLATE® 96-2 Low Profile	120	102-0001-13	\$960

INTELLI-PLATE® 96-3 Low Profile

- One reservoir well: 100µl
- Three sample wells: all 1µl
 - Round well-bottom for easy harvesting
- Low birefringence
- Low profile for compact storage

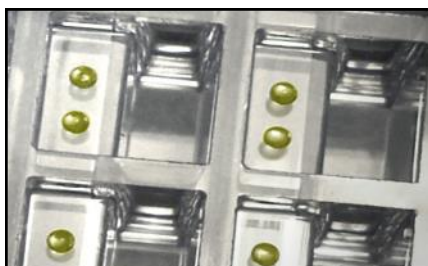
Description	Quantity	Cat. No.	Price
INTELLI-PLATE® 96-2 Low Profile	120	102-0001-13	\$960



96 Well Flat Stage Sitting Drop SBS Crystallization Plate

- Sitting drop vapor diffusion
- Mother liquor cells with a capacity of 70 μ l each
- Crystallization drop area for 50 nl to 1 μ l
- SBS standard design

Description	Quantity	Cat. No.	Price
96 Well Flat Stage Sitting Drop SBS Crystallization Plate	200	XQ-P-96S-A	\$851

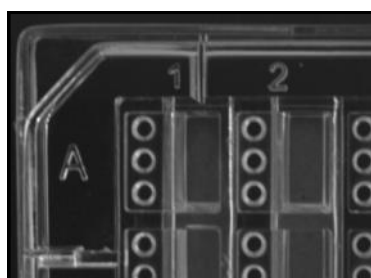


96 Well 2 Sitting Drop Crystallization Plate

protein crystal screening by sitting drop vapor diffusion techniques.

- Sitting drop vapor diffusion
- Mother liquor cells with a capacity of 200 μ l each
- Crystallization drop areas with a capacity of 200 nl to 2 μ l each
- SBS standard design

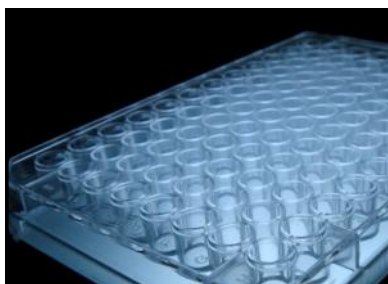
Description	Quantity	Cat. No.	Price
96 Well 2 Sitting Drop Crystallization Plate	200	XQ-P-96S-B	\$920



96 Well 3 Sitting Drop Crystallization Plate

- Sitting drop vapor diffusion
- Mother liquor cells with a capacity of 200 μ l each
- 3 crystallization drop areas with a capacity of 2 μ l each
- SBS standard design

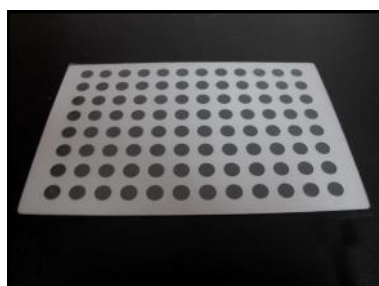
Description	Quantity	Cat. No.	Price
96 Well 3 Sitting Drop Crystallization Plate	200	XQ-P-96S-C	\$920



96 Well Hanging Drop Crystallization Plate

- Hanging drop crystallization
- Mother liquor cells with a capacity of 260 μ l each
- Used for both initial crystallization screening and optimized growth

Description	Quantity	Cat. No.	Price
96 Well Hanging Drop Crystallization Plate	150	XQ-P-96H-A	\$420



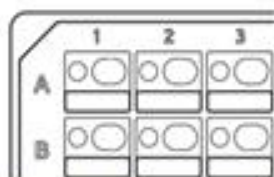
96 Well Hanging Drop Crystallization Sheet

- For high-throughput crystallization screening
- Good optical property and resistance to corrosion
- Multilayer composite structure
- Safe and clean

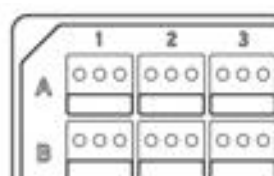
Description	Quantity	Cat. No.	Price
96 Well Hanging Drop Crystallization Sheet	50	XQ-P-96H-B	\$345

48 & 24 Well Crystallization Plates

48 Well Crystallization Plates



Catalog #: 102-0002-00
48-2 Optimization



Catalog #: 102-0003-00
48-3 Screening

All Art Robbins Instruments 48 well plates are:

- Arranged in an 6 x 8 array
- Designed for sitting drop vapor diffusion crystallization

The INTELLI-PLATE® 48-2 is a 48 well sitting drop vapor diffusion crystallography plate for optimization. Each plate is arranged in a 6 x 8 array. Each of the 48 array locations has a reservoir well and two sample wells - one round and one elongated. The maximum fill volume of each reservoir well is 500µl, with 4µl for the round sample well and 20µl for the elongated sample well.

Description	Quantity	Cat. No.	Price
INTELLI-PLATE® 48-2	120	MAR-102-0002-00	\$850

The INTELLI-PLATE® 48-3 is a 48 well sitting drop vapor diffusion crystallography plate for screening. Each plate is arranged as a 6 x 8 array. Each of the 48 array locations have a reservoir well and three identical sample wells. The maximum fill volume of each reservoir well is 500µl

Description	Quantity	Cat. No.	Price
INTELLI-PLATE® 48-3	120	MAR-102-0003-00	\$840

XtalQuest 

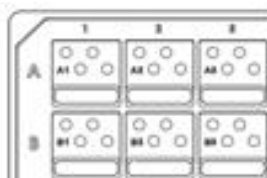


48 Well Double Sample Sitting Drop Crystallization Plate (XQ-P-48S-A):
protein crystal screening by sitting drop vapor diffusion techniques.

- Mother liquor cells with a capacity of 200 µl each
 - Two sample crystallization areas per cell with a capacity of 3µl each
 - SBS standard design

Description	Quantity	Cat. No.	Price
48 Well Double Sample Sitting Drop Crystallization Plate	200	XQ-P-48S-A	\$1101

24 Well Crystallization Plates



Catalog #: 102-0004-00
24-4

NEW INTELLI-PLATE® 24-4 is a 24 well sitting drop plate for crystallization screening and optimization. It features 4 protein wells for each of the 6 screen reservoirs. The reagent reservoir has a volume of 650 µl. The 4 protein wells have a volume of 5 µl.

Description	Quantity	Cat. No.	Price
INTELLI-PLATE® 24-4	120	MAR-102-0004-00	\$840

24 Well Crystallization Plates



greiner bio-one



24 Well ComboPlate™

- Excellent optical properties
- A flattened raised ring around each well reduces the risk of cross-contamination and makes it possible to seal the wells with silicone grease and coverslips (Ø 18 mm) or VIEWseal™ sealer
- Flat well bottom
- Diameter well: 16.3 mm / Max. well volume: 3300 µl

Description	Quantity	Cat. No.	Price
24 Well ComboPlate™	80	M-662850	\$680

XtalQuest



24 Well Big Sitting Drop Crystallization Plate

protein crystal screening by sitting drop vapor diffusion techniques, and for crystallization condition optimization.

- Mother liquor cells with a capacity of 1.5 ml each
- Crystallization area up to 40 µl
- Used for both initial crystallization screening and optimized growth

Description	Quantity	Cat. No.	Price
24 Well Big Sitting Drop Crystallization Plate	80	XQ-P-24S-A	\$680



24 Well Hanging Drop Crystallization Plate (XQ-P-24H-A):

protein crystal screening by hanging drop vapor diffusion techniques, and for crystallization condition optimization.

- Mother liquor cells with a capacity of 100 -1000 µl each
- Crystallization area for 1-10 µl
- Used for both initial crystallization screening and optimized growth

Description	Quantity	Cat. No.	Price
24 Well Hanging Drop Crystallization Plate	80	XQ-P-24H-A	\$680



24 Well Hanging Drop SBS Crystallization Plate

protein crystal screening by hanging drop vapor diffusion techniques, and for crystallization condition optimization.

- Mother liquor cells with a capacity of 100 -1000 µl each
- Crystallization area for 1-10 µl
- SBS standard design

Catalog #: XQ-P-24H-B	Quantity	Cat. No.	Price
24 Well Hanging Drop SBS Crystallization Plate	80	XQ-P-24H-B	\$680

Seals, Tape & Accessories



Circular Glass Cover Slides

(Available plain or with a siliconized surface)

- **18mm**
 - Designed for use with Greiner ComboPlates™ and other 24-well plates for hanging-drop, sitting-drop and sandwich-drop crystallization experiments.
- **22mm**
 - Designed for use with Linbro and other 24-well crystallization plates.

Description	Quantity	Cat. No.	Price
18mm Circular Glass Cover Slides	1000	M-JBSCSL-103	\$150
22mm Circular Glass Cover Slides	1000	M-JBSCSL-104	\$150



HD Clear™ Sealing Tape

- The ideal sealant for sitting drop crystallization plates.
- Available in **standard** (1.88 inches wide) or **extra wide** (3 inches).
- 55 yard roll

Description	Quantity	Cat. No.	Price
HD Clear™ Sealing Tape—Standard	(1) 55 yard roll	M-CTP-100	\$9
HD Clear™ Sealing Tape—Extra Wide	(1) 55 yard roll	M-CTP-101M	\$11



Greiner VIEWseal™

Ideally suited for sealing protein crystallization plates. The **pressure-sensitive silicon coating** will only adhere where pressure is applied. It is optically transparent, even in the UV range (<340 nm), and has a very low auto fluorescence.

Description	Quantity	Cat. No.	Price
Greiner VIEWseal™	100	M-676070	\$208



Dow Corning® High Vacuum Grease

The standard sealant for 24-well crystallization plate setups using cover slides for hanging drops.

Description	Quantity	Cat. No.	Price
Dow Corning® High Vacuum Grease	(1) 150g tube	M-CTP-DCVG-1	\$38

Crystallization Screens

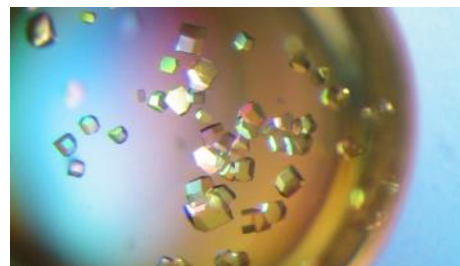
Applications

Easily and efficiently screen for crystallization conditions for proteins, peptides, nucleic acids, macromolecular complexes and water-soluble small molecules.

Features

Maximize the number of hits by using proven formulations that offer a broad sampling of crystallization space .

- The high-quality reagents are prepared with great care ensuring elaborate and reproducible crystallization experiments. (ISO 9001:2000-12)
- Available in HTS 96-well blocks (1.7 ml per well), bulk 10 ml reagent volumes tubes or as single stocks.



Crystallization Screens Overview

Classic: JBScreen Classic Kits 1-10 cover 240 of the most successful conditions for protein crystallization. Their compositions were obtained by examining **the** published crystallization conditions of thousands of proteins.

Basic: Based on the classic sparse matrix crystallization screen first published by Jancarik and Kim in 1991, JBScreen Basic contains 96 unique reagent mixtures for screening a wide range of pH and various salts and precipitants.

Membrane: Optimized for hydrophobic and membrane proteins.

Kinase: A highly effective crystallization screen based on data analyses of published kinase structures.

PEG/Salt: For efficient screening of PEG 3350 and PEG 5000 MME versus 48 different salts.

PACT++: Systematic screen for pH, anion, cation testing in the presence of polyethylene glycol.

JCSG++: Optimized sparse matrix screen developed by the Joint Center for Structural Genomics (JCSG).

Nuc-Pro: A highly effective sparse matrix screen based upon extensive screening of the PDB, with focus on entries by structural genomic initiatives, the BMCD and other protocols.

Pentaerythritol: A systematic crystallization screen based on pentaerythritol polymers as precipitants developed by Ulrike Demmer from the Max-Planck-Institute for Biophysics in Frankfurt

Pi-Minimal: Developed at the MRC Laboratory of Molecular Biology (Cambridge, UK) for efficient crystallization screening of soluble proteins. The approach is based on incomplete factorial design.

Pi-PEG: Developed at the MRC Laboratory of Molecular Biology (Cambridge, UK). It has been designed for efficient crystallization screening of integral membrane proteins benefiting from the experience of membrane pro-

Additional Information

For more information and the complete list of crystallization screens and reagents available visit:

www.mitegen.com/screens

The JBScreen Classic is a crystallization kit designed for efficient and flexible screening of crystallization conditions for proteins, peptides, nucleic acids, macromolecular complexes and water-soluble small molecules.

Kits 1 - 10 cover 240 of the most prominent buffers for protein crystallization. Their compositions result from data mining of several thousands of crystallized proteins. They are statistically the most successful buffers for protein crystals suitable for X-ray diffraction.

The **JBScreen Classic** buffers are principally ordered by type and concentration of the precipitant. This allows easy extraction of all relevant information and is already a first step to a refinement: Once you get a hit, you immediately see the effects of the neighboring conditions. Subsequent fine tuning of preliminary hits will be much more efficient.

Selected Literature Citations of JBScreen Classic

- Couturier *et al.* (2013) In the Absence of Thioredoxins, What Are the Reductants for Peroxiredoxins in *Thermotoga maritima*. *Antioxidants & Redox Signaling* **18**:1613.
- Volkov *et al.* (2013) Crystal structure analysis of a fatty acid double-bond hydratase from *Lactobacillus acidophilus*. *Acta Cryst D* **69**:648.
- Raaf *et al.* (2013) First Structure of Protein Kinase CK2 Catalytic Subunit with an Effective CK2b-competitive Ligand. *ACS Chemical Biology* DOI: 10.1021/cb3007133.

Product	Amount	Cat. No.	Price
JBScreen Classic 1 (PEG 400 to 3000 based)	24 solutions (10 ml each)	M-CS-101L	\$207
JBScreen Classic 2 (PEG 4000 based)	24 solutions (10 ml each)	M-CS-102L	\$207
JBScreen Classic 3 (PEG 4000+ based)	24 solutions (10 ml each)	M-CS-103L	\$207
JBScreen Classic 4 (PEG 5000 MME to 8000 based)	24 solutions (10 ml each)	M-CS-104L	\$207
JBScreen Classic 5 (PEG 8000 to 20000 based)	24 solutions (10 ml each)	M-CS-105L	\$207
JBScreen Classic 6 (Ammonium Sulfate based)	24 solutions (10 ml each)	M-CS-106L	\$207
JBScreen Classic 7 (MPD based)	24 solutions (10 ml each)	M-CS-107L	\$207
JBScreen Classic 8 (MPD/Alcohol based)	24 solutions (10 ml each)	M-CS-108L	\$207
JBScreen Classic 9 (Alcohol/Salt based)	24 solutions (10 ml each)	M-CS-109L	\$207
JBScreen Classic 10 (Salt based)	24 solutions (10 ml each)	M-CS-110L	\$207
JBScreen Classic HTS I (PEG based)	96 solutions (1.7 ml each)	M-CS-201L	\$297
JBScreen Classic HTS II (Ammonium Sulfate, MPD, Alcohol and Salt based)	96 solutions (1.7 ml each)	M-CS-202L	\$297

JBScreen Classic comprises 10 kits of 24 unique reagents in the standard 10 ml bulk format.

HTS I+II contains the formulations fit to the 96-well format for high throughput applications. Each JBScreen Classic HTS deep-well block is pre-filled with 96 sterile conditions at 1.7 ml each.



Crystallization Screens

JBScreen Basic – Sparse-Matrix Sampling

Despite intensive research, the crystallization of biological macromolecules remains a process of trial and error. Nucleation and crystal growth are influenced by the interaction of many variables, such as temperature, pH, precipitant and salt concentration.

Testing all possible combinations would be too time consuming and would require enormous amounts of sample. One approach to find suitable crystallization conditions is the Sparse-Matrix method. This method involves screening with an intentional bias towards conditions which have been proven successful in the crystallization of biological macromolecules.

In 1991, Jancarik and Kim published 50 conditions, which were derived from previously crystallized proteins [1]. These and other conditions form the basis of the JBScreen Basic system [1,2].

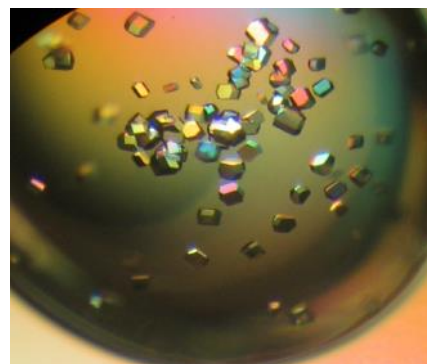
JBScreen Basic is designed to fit the 24-well plate format and like in all other JBScreen crystallization kits, we abstained from the use of cacodylate buffers and replaced them with MES.

JBScreen Basic contains 96 unique reagent mixtures for screening a wide range of pH and various salts and precipitants. Each condition of the four kits is supplied in 10 ml quantities. For high-throughput users, we offer all 96 conditions in pre-filled deep well blocks.

Selected Literature Citations of JBScreen Basic

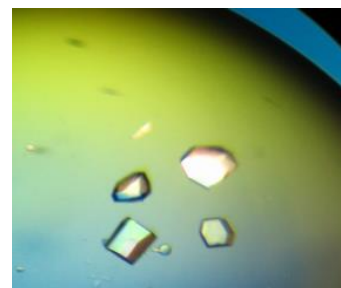
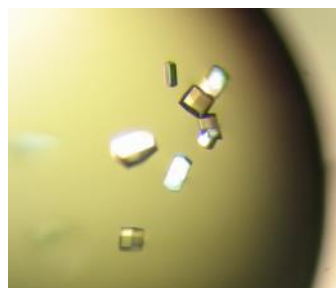
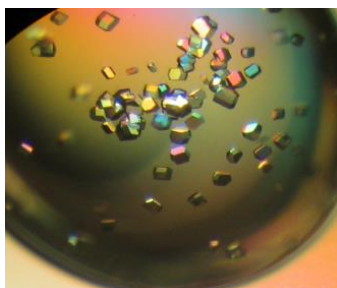
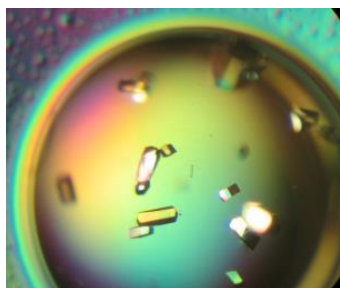
- Fislage *et al.* (2011) Crystallization and preliminary X-ray crystallographic analysis of putative tRNA-modification enzymes from *Pyrococcus furiosus* and *Thermus thermophilus*. *Acta Cryst. F* **67**(2):1432.
- Van de Water *et al.* (2011) Crystallization and preliminary X-ray diffraction analysis of kanamycin-binding-lactamase in complex with its ligand. *Acta Cryst. F* **67**(6):703.
- Kumar *et al.* (2009) Crystallization and preliminary X-ray diffraction analysis of human seminal plasma protein PSP94. *Acta Cryst. F* **65**:389.
- Squina *et al.* (2009) Expression, purification, crystallization and preliminary crystallographic analysis of an endo-1,5- α -L-arabinanase from hyperthermophilic *Thermotoga petrophila*. *Acta Cryst. F* **65**:902.
- Feahnle *et al.* (2006) Examination of Key Intermediates in the Catalytic Cycle of Aspartate- β -semialdehyde Dehydrogenase from a Gram-positive Infectious Bacteria. *J. Biol. Chem.* **281**:31031.

Product	Amount	Cat. No.	Price
JBScreen Basic 1	24 solutions (10 ml each)	M-CS-121	\$207
JBScreen Basic 2	24 solutions (10 ml each)	M-CS-122	\$207
JBScreen Basic 3	24 solutions (10 ml each)	M-CS-123	\$207
JBScreen Basic 4	24 solutions (10 ml each)	M-CS-124	\$207
JBScreen Basic Bundle 1-4	96 solutions (10 ml each)	M-CS-125	\$648
JBScreen Basic HTS I	96 solutions (1.7 ml each)	M-CS-203L	\$297



References

- [1] Jancarik and Kim (1991) Sparse matrix sampling: a screening method for crystallization of proteins. *J. Appl. Cryst.* 24:409.
[2] Cudney *et al.* (1994) Screening and optimization strategies for macromolecular crystal growth. *Acta Cryst. D* 50:414.



JBScreen Membrane

The **JBScreen Membrane Screens 1 - 3** cover 72 of the most successful buffers for crystallization of membrane proteins. Their compositions result from analyzing the crystallization conditions of all membrane proteins crystallized so far.

The **JBScreen Membrane** crystallization buffers are principally ordered by type and concentration of the precipitant. Like in case of the "classic" JBScreen system, this allows easy extraction of all relevant information and is already a first step to a refinement: Once you get a hit, you immediately see the effects of the neighboring conditions. Subsequent fine tuning of preliminary hits will be much more efficient.

The powerful conditions and sensible layout make JBScreen Membrane a first choice for crystallization screening of membrane proteins. When used in combination with the **JBScreen Detergents kits**, a further dramatic enhancement of membrane protein crystallization potential is realized.

Each kit contains 24 sterile solutions, 10 ml each. All reagents are also available in a pre-filled deep well block

Selected Literature Citations of JBScreen Membrane

- Jacobs *et al.* (2012) Expression, purification and crystallization of the outer membrane lipoprotein GumB from *Xanthomonas campestris*. *Acta Cryst. F* **68**:1255.
- Li *et al.* (2011) Crystallizing Membrane Proteins in Lipidic Mesophases. A Host Lipid Screen. *Crystal Growth & Design* **11**(2):530.
- Shaw Stewart *et al.* (2011) Random Microseeding: A Theoretical and Practical Exploration of Seed Stability and Seeding Techniques for Successful Protein Crystallization. *Crystal Growth & Design* **11**(8):3432.
- Cherezov *et al.* (2006) In Meso Structure of the Cobalamin Transporter, BtuB, at 1.95 Å Resolution. *J. Mol. Biol.* **364**:716.

Product	Amount	Cat. No.	Price
JBScreen Membrane 1 (PEG 400 to PEG 2000 MME based)	24 solutions (10 ml each)	M-CS-301L	\$207
JBScreen Membrane 2 (PEG 2000 MME to PEG 10000 based)	24 solutions (10 ml each)	M-CS-302L	\$207
JBScreen Membrane 3 (Ammonium Sulfate, Alcohol and Salt Based)	24 solutions (10 ml each)	M-CS-303L	\$207
JBScreen Membrane HTS	72 solutions (1.7 ml each)	M-CS-305L	\$237
JBScreen Membrane Bundle 1-3	3 Kits	M-CS-306L	\$595
JBScreen Membrane 1-3 & JBScreen Detergents	3 +1 Kits	M-CS-307LL	\$813

Crystallization Screens

JBScreen Kinase

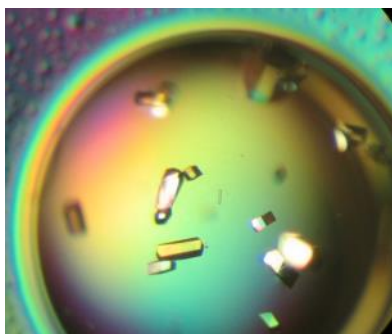
JBScreen Kinase is a highly specialized screen formulated for the determination of initial crystallization conditions of protein kinases.

Through the use of advanced data mining, crystallization conditions of kinases have been identified from published structures. Data evaluation and verification resulted in the formulation of 96 unique reagents, highly effective for the crystallization of kinases.

JBScreen Kinase utilizes a variety of different precipitating agents, i.e. various molecular weight PEGs, MPD and Ammonium Sulfate, in combination with buffers covering a pH range from 3.1 – 10.0 and numerous additives.

Selected Literature Citations of JBScreen Kinase

- Yunta *et al.* (2011) SnRK2.6/OST1 from *Arabidopsis thaliana*: cloning, expression, purification, crystallization and preliminary X-ray analysis of K50N and D160A mutants. *Acta Cryst. F* **67(3)**:364.



Product	Amount	Cat. No.	Price
JBScreen Kinase 1	24 solutions (10 ml each)	M-CS-131	\$207
JBScreen Kinase 2	24 solutions (10 ml each)	M-CS-132	\$207
JBScreen Kinase 3	24 solutions (10 ml each)	M-CS-133	\$207
JBScreen Kinase 4	24 solutions (10 ml each)	M-CS-134	\$207
JBScreen Kinase Bundle 1-4	4 Kits	M-CS-135	\$648
JBScreen Kinase HTS I	96 solutions (1.7 ml each)	M-CS-204L	\$297

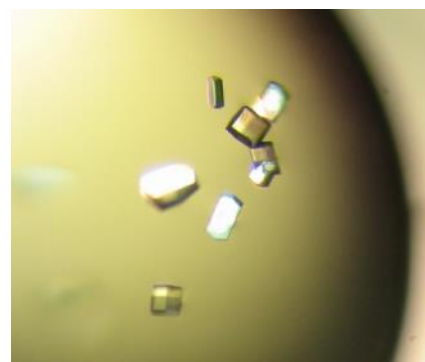
JBScreen PEG/Salt

JBScreen PEG/Salt is an effective reagent kit designed for initial screening of crystallization conditions of biological macromolecules.

It comprises high-purity PEG 3350 and PEG 5000 MME, each combined with 48 different salts, thus covering a range of anions and cations most frequently used in bio-crystallography. The unique combination of the reagents allows screening of PEG versus ionic strength, ion type and pH.

All reagents are prepared using chemicals of microselect grade for molecular biology and ultra-pure water, followed by sterile (0.2 µm) filtration .

Product	Amount	Cat. No.	Price
JBScreen PEG/Salt 1	24 solutions (10 ml each)	M-CS-141	\$207
JBScreen PEG/Salt 2	24 solutions (10 ml each)	M-CS-142	\$207
JBScreen PEG/Salt 3	24 solutions (10 ml each)	M-CS-143	\$207
JBScreen PEG/Salt 4	24 solutions (10 ml each)	M-CS-144	\$207
JBScreen PEG/Salt Bundle 1-4	4 Kits	M-CS-145	\$648
JBScreen PEG/Salt HTS I	96 solutions (1.7 ml each)	M-CS-205L	\$297



JBScreen Pentaerythritol

JBScreen Pentaerythritol has been designed for efficient crystallization screening of biological macromolecules based on pentaerythritol polymers as precipitants. The screen was developed by Ulrike Demmer from the Max-Planck-Institute for Biophysics in Frankfurt.

The choice of a suitable precipitant is of crucial importance for the crystallization of proteins. JBScreen Pentaerythritol utilizes two novel precipitating agents, i.e. pentaerythritol propoxylate and pentaerythritol ethoxylate. Both are branched polymers containing a pentaerythritol backbone. Thus they differ from more traditional precipitants like MPD and PEG's in size and nature.

In addition, pentaerythritol polymers function as cryoprotectants. Protein crystals grown in high concentrations of these precipitants can be frozen directly from the crystallization drop. The successful application of pentaerythritol polymers to yield protein crystals was first described by Gulick et al. [1]. Now this class of precipitants has been used for membrane crystallization, too. The X-ray structure of cbb3 Cytochrome Oxidase was recently published in Science [2]. Crystals of this proton pumping membrane protein were successfully grown using pentaerythritol ethoxylate as precipitation agent.

JBScreen Pentaerythritol comprises of 96 unique conditions, based on 4 different pentaerythritol polymers as precipitating agent:

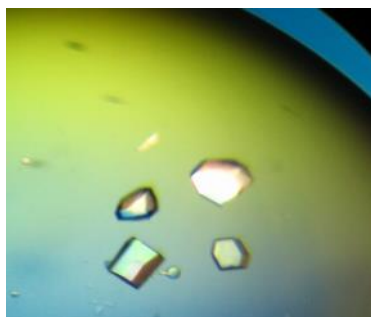
- Pentaerythritol propoxylate 426 (5/4 PO/OH)
- Pentaerythritol propoxylate 629 (17/8 PO/OH)
- Pentaerythritol ethoxylate 270 (3/4 EO/OH)
- Pentaerythritol ethoxylate 797 (15/4 EO/OH)

The 4 polymers are arranged to a grid screen, thus allowing screening i) of three different precipitant concentrations, ii) four different pH values and iii) with and without the addition of salts, i.e. magnesium chloride, ammonium sulfate, potassium chloride.

The advantage of JBScreen Pentaerythritol not only lies in the novel 96 conditions but also in the systematic arrangement of the unique reagents, which enables the user to compare individual conditions directly. Even if initial screening may not always yield crystals, valuable information about the protein under investigation can be obtained from the scoring sheet.

Selected Literature Citations of JBScreen Pentaerythritol

- Reikittke *et al.* (2012) Structure of the GcpE (IspG)–MEcPP complex from *Thermus thermophilus*. *FEBS Letters* **586**(19):3452.
- Fislage *et al.* (2011) Crystallization and preliminary X-ray crystallographic analysis of putative tRNA-modification enzymes from *Pyrococcus furiosus* and *Thermus thermophilus*. *Acta Cryst. F* **67**(2):1432



Product	Amount	Cat. No.	Price
JBScreen Pentaerythritol 1 (PEP 426 based)	24 solutions (10 ml each)	M-CS-191	\$207
JBScreen Pentaerythritol 2 (PEP 629 based)	24 solutions (10 ml each)	M-CS-192	\$207
JBScreen Pentaerythritol 3 (PEP 270 based)	24 solutions (10 ml each)	M-CS-193	\$207
JBScreen Pentaerythritol 4 (PEP 797 based)	24 solutions (10 ml each)	M-CS-194	\$207
JBScreen Nuc-Pro Bundle 1-4	4 Kits	M-CS-195	\$648
JBScreen Nuc-Pro HTS I	96 solutions (1.7 ml each)	M-CS-210L	\$297

References and Recommended Reading

- [1] Gulick *et al.* (2002) Pentaerythritol propoxylate: a new crystallization agent and cryoprotectant induces crystal growth of 2-methylcitrate dehydratase. *Acta Cryst. D* **58**:306.
- [2] Buschmann *et al.* (2010) The Structure of cbb3 Cytochrome Oxidase Provides Insights into Proton Pumping. *Science* **329**:327 .

Crystallization Screens

Pi-minimal Screen

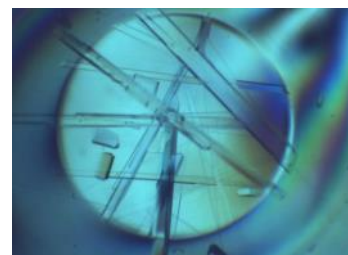
Application: Efficient crystallization screening of soluble proteins

The Pi-minimal Screen was developed at the MRC Laboratory of Molecular Biology (Cambridge, UK) for efficient crystallization screening of soluble proteins [1]. The approach is based on incomplete factorial design.

The unique formulation was generated following a strategy named Pi sampling [1] in order to create novel combinations of precipitants, buffers and additives across a standard 96-condition plate layout. Thus, the diversity amongst the crystallization conditions is ideal for initial screening.

The Pi-minimal Screen includes 36 components, i.e. 12 precipitants, 12 buffers systems and 12 salts. Buffers employed in the Pi-minimal screen are buffer systems (acid-base pairs, e.g. HEPES and HEPES sodium salt). Consequently, pH can be adjusted by mixing 2 stock solutions at different ratios during later optimizations. The efficiency of the Pi-minimal Screen was demonstrated by the crystallization of 10 proteins before its commercialization [1].

Product	Amount	Cat. No.	Price
Pi-minimal Screen	4 x 24 solutions (10 ml each)	M-CS-127	\$577
Pi-minimal Screen HTS	96 solutions (1.7 ml each)	M-CS-211L	\$303



Pi-PEG Screen

Application: Efficient crystallization screening of soluble proteins and an integral membrane proteins

The Pi-PEG Screen was developed at the MRC Laboratory of Molecular Biology (Cambridge, UK). The strategy employed is based on incomplete factorial design [1]. It has been designed for efficient crystallization screening of integral membrane proteins benefiting from the experience of membrane protein crystallization at the MRC.

Like for the Pi-minimal screen, the unique formulation was generated following a strategy named Pi sampling [1] in order to create novel combinations of precipitants, buffers and additives across a standard 96-condition plate layout. Thus, the diversity amongst the crystallization conditions is ideal for initial screening.

The efficiency of the Pi-PEG screen was demonstrated by the crystallization of a G-protein coupled receptor (GPCR) when quality crystals could not be produced with other commercially available screens [1].

The Pi-PEG Screen includes various polyethylene glycol mixtures, additives and buffers covering a pH range from 4.0 – 9.5 and hence it is also appropriate for soluble proteins

Product	Amount	Cat. No.	Price
Pi-PEG Screen	4 x 24 solutions (10 ml each)	M-CS-128	\$577
Pi-PEG Screen HTS	96 solutions (1.7 ml each)	M-CS-212L	\$303

References for Pi-minimal and Pi-PEG Screens

[1] Gorrec *et al.* (2011) Pi sampling: a methodical and flexible approach to initial macromolecular crystallization screening. *Acta Cryst. D* **67**:463.

JBScreen Nuc-Pro

JBScreen Nuc-Pro is designed to screen for preliminary crystallization conditions of nucleic acids and protein-nucleic acid complexes.

The highly effective sparse matrix screen is based upon extensive screening of the PDB [1], with focus on entries by structural genomic initiatives, the BMCD [2] and other protocols [3-5]. Reported crystallization conditions for various RNAs, DNAs as well as protein-nucleic acid complexes were compiled and analyzed for rate of recurrence.

The 96 conditions selected cover a variety of polymers, mono- and divalent metal ions, organics, alcohols and buffers of a pH range from 4.0 to 8.5. The organization of the reagents into individual kits is based upon the main precipitant, i.e. various molecular weight PEGs, Salts, alcohols (MPD and 2-Propanol).

JBScreen Nuc-Pro is available as 4 individual kits containing 24 reagents each in 10 ml bulk format or in a pre-filled 96 deep well block.

Selected Literature Citations of JBScreen Nuc-Pro

- Tishchenko *et al.* (2013) Crystallization and preliminary X-ray diffraction studies of *Drosophila melanogaster* Gao-subunit of heterotrimeric G protein in complex with the RGS domain of CG5036. *Acta Cryst. F* **69**:61.

Product	Amount	Cat. No.	Price
JBScreen Nuc-Pro 1	24 solutions (10 ml each)	M-CS-181	\$207
JBScreen Nuc-Pro 2	24 solutions (10 ml each)	M-CS-182	\$207
JBScreen Nuc-Pro 3	24 solutions (10 ml each)	M-CS-183	\$207
JBScreen Nuc-Pro 4	24 solutions (10 ml each)	M-CS-184	\$207
JBScreen Nuc-Pro Bundle 1-4	4 Kits	M-CS-185	\$648
JBScreen Nuc-Pro HTS I	96 solutions (1.7 ml each)	M-CS-209L	\$297

References and Recommended Reading

- [1] Berman *et al.* (2000) The Protein Data Bank. *Nucleic Acids Research* **28**:235.
 [2] Gilliland *et al.* (1994) The Biological Macromolecule Crystallization Database, Version 3.0: New Features, Data, and the NASA Archive for Protein Crystal Growth Data. *Acta Cryst. D* **50**:408.
 [3] Doudna *et al.* (1993) Crystallization of ribozymes and small RNA motifs by a sparse matrix approach. *Proc. Natl. Sci. USA* **90**:7829.
 [4] Scott *et al.* (1995) Rapid Crystallization of Chemically Synthesized Hammerhead RNAs using a Double Screening Procedure. *J. Mol. Biol.* **250**:327.
 [5] Ke *et al.* (2004) Crystallization of RNA and RNA-protein complexes. *Methods* **34**:408.

JBScreen Screens are available in kits of 24 unique reagents in the standard 10 ml bulk format.

HTS kits contains the formulations fit to the 96-well format for high throughput applications. Each HTS deep-well block is pre-filled with 96 sterile conditions at 1.7 ml each.



Crystallization Screens

JBScreen PACT ++

JBScreen PACT++ is a crystallization screen facilitating systematic pH, anion- and cation testing in the presence of polyethylene glycol (PEG) based on the work of Newman et al. [1].

The 96 unique crystallization conditions combine three mini-screens in one:

1. 24-condition PEG/pH screen
2. 24-condition PEG/cation screen
3. 48-condition PEG/anion screen

This systematic approach aims to alter individual components of the crystallization conditions, i.e. pH, anions and cations, independently from the others in order to obtain more information of the precipitation behavior of the protein.

When JBScreen **PACT++** is used along with JBScreen **JCSG++**, systematic investigation of the precipitation behavior of the protein can be combined with a sparse matrix screen in order to enhance the success rate of protein crystallization.

uProduct	Amount	Cat. No.	Price
JBScreen PACT++ 1	24 solutions (10 ml each)	M-CS-161	\$207
JBScreen PACT++ 2	24 solutions (10 ml each)	M-CS-162	\$207
JBScreen PACT++ 3	24 solutions (10 ml each)	M-CS-163	\$207
JBScreen PACT++ 4	24 solutions (10 ml each)	M-CS-164	\$207
JBScreen PACT++ Bundle 1-4	4 Kits	M-CS-165	\$648
JBScreen PACT++ HTS I	96 solutions (1.7 ml each)	M-CS-207L	\$297

References

[1] Newman *et al.* (2005) Towards rationalization of crystallization screening for small- to medium-sized academic laboratories: the PACT/JCSG+ strategy. *Acta Cryst. D* **61**:1426.

JBScreen JCSG++

JBScreen JCSG++ is an sparse matrix screen optimized for initial screening of crystallization conditions of biological macromolecules. The screen has been formulated by researchers from the Joint Center for Structural Genomics (JCSG) [1] and from the European Genomics Consortium [2].

96 reagents have been selected with the aim and to maximize the coverage of the crystallization parameter space and to reduce the redundancy of crystallization conditions within commercially available crystallization screens. Thus, a core set of 66 conditions used by the JCSG for high-throughput structural determination [1] was extended to 96 screening conditions in order to round off the pH profile and to incorporate different precipitants such as succinate, malonate and formate.

When JBScreen JCSG++ is used along with JBScreen PACT++, the benefits of a sparse matrix screen can be combined with the systematic investigation the precipitation behavior of the protein.

Product	Amount	Cat. No.	Price
JBScreen JCSG++ 1	24 solutions (10 ml each)	M-CS-151	\$207
JBScreen JCSG++ 2	24 solutions (10 ml each)	M-CS-152	\$207
JBScreen JCSG++ 3	24 solutions (10 ml each)	M-CS-153	\$207
JBScreen JCSG++ 4	24 solutions (10 ml each)	M-CS-154	\$207
JBScreen JCSG++ Bundle 1-4	4 Kits	M-CS-155	\$648
JBScreen JCSG++ HTS I	96 solutions (1.7 ml each)	M-CS-206L	\$297

References

[1] Page *et al.* (2004) Shotgun crystallization strategy for structural genomics: an optimized two-tiered crystallization screen against the *Thermotoga maritima* proteome. *Acta Cryst. D* **59**:1028.

[2] Newman *et al.* (2005) Towards rationalization of crystallization screening for small- to medium-sized academic laboratories: the PACT/JCSG+ strategy. *Acta Cryst. D* **61**:1426.

JBScreen Single Stocks

Single stock solutions of the **JBScreen** components, i.e. polymers, buffers and salts are ideal for the optimization of your crystallization conditions.

Using the same chemicals as utilized in the JBScreens ensures higher reproducibility of your experiments. **JBScreen Single Stocks** are ready for use: the concentration is adjusted and they are sterile filtered. block.

Pricing and Catalog Information

For pricing information and the complete list of single stocks available visit:
www.mitegen.com/screens

JBScreen Individual Reagents

Access to individual screen conditions in larger volumes is important when it comes to reproducing initial hits and starting crystallization optimization, or for soaking experiments (heavy atom derivatization).

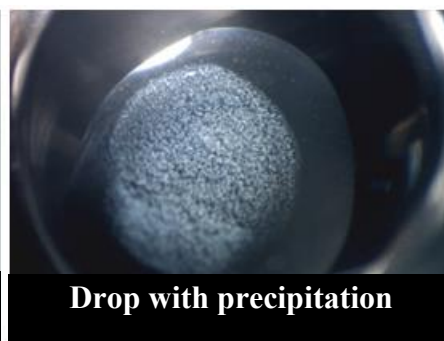
Individual conditions are available for all screens of the **JBScreen Family**.

Product	Amount	Cat. No.	Price
Individual Jena Bioscience Screen Condition, 10 ml Indicate screen name, Cat.# and condition # when placing the order	10 ml	M-CS-IND-10ML	\$86
Individual Jena Bioscience Screen Condition, 100 ml Indicate screen name, Cat.# and condition # when placing the order	100 ml	M-CS-IND-100ML	\$186

JBScreen Solubility HTS

JBScreen Solubility HTS, developed by Meindert Lamers from the MRC in Cambridge, is designed to quickly find suitable buffer components to purify and store protein in.

JBScreen Solubility HTS tests for buffer, pH, salt and glycerol at the same time: For all proteins investigated, suitable conditions were found in a single assay. Protein and buffer conditions are dispensed in a ratio of 1:3, thereby minimizing the effect of any buffer components in which the protein is initially stored. Standard crystallization robots set up the assay in 5 minutes and very small amounts of protein are required (10 μ l @ 5-10 mg/ml). The results are visible after one hour at high protein concentration or 12 hours at low protein concentration:



Product	Amount	Cat. No.	Price
JBScreen Solubility HTS	95 solutions (1.7 ml/well)	M-CO-311	\$365

Crystallization Optimization - Chemical Environment

JBS Solubility Kit

The JBS Solubility Kit is a pre-crystallization screen to improve the composition of the initial protein buffer solution prior to performing crystallization set-ups [1]. Since the highly complex properties of proteins are dependent on their environment, buffer solutions play an important role, i.e. influencing the solubility and the aggregation behavior of the protein sample.

Studies have shown that aggregation of the protein may inhibit nucleation and crystal growth. Therefore, the JBS Solubility Kit has been developed to investigate protein samples towards their homogeneity and monodispersity prior to crystallization trials, employing hanging drop vapour diffusion experiments combined with dynamic light scattering.

The JBS Solubility Kit contains a set of 24 buffer solutions at different pH-values for setting up hanging drop vapour diffusion experiments in order to monitor the aggregation and precipitation of the protein sample, and a set of 14 additives used for further optimization employing dynamic light scattering.

Selected Literature Citations of JBS Solubility

- Gonçalves *et al.* (2011) Crystallization and preliminary X-ray analysis of mannosyl-3-phosphoglycerate phosphatase from *Thermus thermophilus* HB27. *Acta Cryst. F* **67**(3):390.
- Benvenuti *et al.* (2007) Crystallization of soluble proteins in vapor diffusion for x-ray crystallography. *Nature Protocols* **2**(7):1633.

Product	Amount	Cat. No.	Price
JBS Solubility Kit	1 Kit	M-CO-310	\$210

References

[1] Jancarik *et al.* (2004) Optimum solubility (OS) screening: an efficient method to optimize buffer conditions for homogeneity and crystallization of proteins. *Acta Cryst D* **60**:1670.

JBScreen Detergents

JBScreen Detergents can be used throughout the protein purification process or can be added afterwards by dialysis or ion-exchange chromatography (detergent exchange). Detergent exchange can be vital for obtaining well-diffracting membrane-protein crystals [1].

JBScreen Detergents is also valuable for additive screening with detergents and detergent mixtures [2,3] in combination with the **JBScreen Membrane**. This combination will enable you to screen a broad range of crystallization conditions, while concentrating on the most successful detergents - and therefore making crystallization screening of membrane proteins much more efficient and less time consuming.

24 detergents are supplied as stock solutions at 5 or 10 times the reported CMC (Critical Micellar Concentration), with 100 or 200 µl per compound. The recommended final detergent concentration in a hanging-drop experiment (prior to equilibration) is 1 to 3 x the CMC.

Product	Amount	Cat. No.	Price
JBScreen Detergents	24 solutions (100 or 200 µl each)	M-CD-103	\$245



References

- Rosenow *et al.* (2003) The influence of detergents and amphiphiles on the solubility of the light harvesting complex. *Acta Cryst. D* **59**:1422
- Adir (1999) Crystallization of the oxygen-evolving reaction centre of photosystem II in nine different detergent mixtures. *Acta Cryst. D* **55**:891
- Koronakis *et al.* (2000) Crystal structure of the bacterial membrane protein TolC central to multidrug efflux and protein export. *Nature* **405**:914

JBScreen Detergent Test Kit

The **JBSolution Detergent Test Kit** is designed to optimize solubilization of membrane proteins. Compounds assembled in the kit range from ionic and non-ionic to zwitter-ionic detergents. These detergents have non-denaturing as well as denaturing properties. The arrangement is based on years of experience. The Kit contains 4 ml stock solutions of 27 detergents and 3 buffers at 1 M concentration (Tris-HCl, NaHEPES, NaPB), each at two different pH-values (7.5 and 8.0).

Contents:

Cationic	non-ionic
Cetylpyridinium chloride Cetyltrimethylammonium bromide	Brij 35 Deoxy-BIGCHAP HECAMEG MEGA-8 MEGA-9 MEGA-10 n-Octyl-beta-D-glucopyranoside Pluronic F-68 Sucrose monolaurate Triton X-100 Triton X-114 Tween 20 Tween 80 Nonidet P40
anionic	zwitterionic
N-Lauroylsarcosine-sodium salt Lithiumdodecyl sulfate Sodium cholate Sodium deoxycholate SDS (Sodiumdodecylsulfate)	CHAPS CHAPSO Sulfobetaine SB10 Sulfobetaine SB12 Sulfobetaine SB14 Sulfobetaine SB16



Product	Amount	Cat. No.	Price
JBSolution Detergent Test Kit	27 detergents (4 ml each)	M-DK-101	\$273

JBScreen Buffer Kits

JBScreen Buffer Kits are designed for convenient reproduction and optimization of crystallization conditions. The solutions can be used to reformulate conditions of the JBScreen family, e.g. JBScreen Classic, JBScreen Basic, JBScreen Cryo, and other commercially available crystallization screens.

Furthermore, JBScreen Buffer Kits can be employed for the straightforward preparation of custom screen solutions for the refinement and optimization of initial crystallization conditions. The JBScreen Buffer Kit formulations will help to save time preparing accurate and high-quality reagents for the reproducible production of single protein crystals.

The JBScreen Buffer Kits contain ready-made buffer solutions with preset pH values.

- JBScreen Buffer Kit Sodium Acetate, pH 3.6 – 5.6
- JBScreen Buffer Kit Sodium Citrate, pH 3.7 – 6.0
- JBScreen Buffer Kit MES, pH 5.6 – 6.7
- JBScreen Buffer Kit HEPES, pH 6.8 – 8.2
- JBScreen Buffer Kit Tris-HCl, pH 7.1 – 9.0

Each buffer is provided as a 1.0 M stock solution and supplied in 10 ml volumes

Product	Amount	Cat. No.	Price
JBScreen Buffer Kit Sodium Acetate	21 solutions (10 ml /1 M each)	M-CO-101	\$207
JBScreen Buffer Kit Sodium Citrate	21 solutions (10 ml /1 M each)	M-CO-102	\$207
JBScreen Buffer Kit MES	21 solutions (10 ml /1 M each)	M-CO-103	\$207
JBScreen Buffer Kit HEPES	21 solutions (10 ml /1 M each)	M-CO-104	\$207
JBScreen Buffer Kit Tris-HCl	21 solutions (10 ml /1 M each)	M-CO-105	\$207

JBScreen pH-2D

JBScreen pH-2D is designed to sample a broad pH-range without changing the buffering environment [1]. This ensures pH-screening independent of the chemical nature of the components of the buffer system.

JBScreen pH-2D contains six extended range buffer systems; each composed of a mixture of three individual buffers with a distinct chemical nature and well separated pKa values. Each buffer system is composed of a low-pH and a high-pH stock solution, supplied in 10 ml volumes. The low-pH stock solution is preset at pH 4.0 and the high-pH solution at either pH 9.0 or 10.0 (see download). Thus, mixtures of the low-pH and high-pH stock solutions in different proportions allow to cover the entire pH range from 4.0 – 9.0 or 4.0 – 10.0, respectively. The composition of the buffer systems assures a virtually linear distribution of the resulting pH vs the percentage of high pH / low pH stock.

Product	Amount	Cat. No.	Price
JBScreen pH-2D	6 buffer systems (10 ml each)	M-CS-701	\$170

References

[1] Newman (2004) Novel buffer systems for macromolecular crystallization. Acta Cryst. D60:610

JBScreen Plus is an additive screen most useful in the optimization of preliminary crystallization conditions. The selection of the additives is based on the Hofmeister series, which reflects the ability of ions to stabilize the structure of proteins. Thus ions can be classified as either kosmotropic or chaotropic. The first having structure stabilizing properties, thus they may assist in, e.g. crystallizing proteins with a high proportion of flexible loop regions. The latter show structure disturbing properties which may assist in the crystallization of large complexes allowing them to re-arrange to form favorable crystal contacts.

JBScreen Plus consists of 5 individual kits, JBScreen Plus Kosmotropic, JBScreen Plus Chaotropic, JBScreen Plus Salts, JBScreen Plus Additives and JBScreen Plus Volatiles, containing 24 different additives each. The ready-to-use reagents are supplied in 1 ml aliquots.

The 96 solutions of **JBScreen Plus HTS**, comprising the reagents of the kosmotropic, chaotropic, salts and additive kit, are supplied in a sterile deep well block containing 1 ml per well.

Product	Amount	Cat. No.	Price
JBScreen Plus Kosmotropic	24 solutions (1.0 ml each)	M-CS-501	\$216
JBScreen Plus Chaotropic	24 solutions (1.0 ml each)	M-CS-502	\$216
JBScreen Plus Salts	24 solutions (1.0 ml each)	M-CS-503	\$216
JBScreen Plus Additives	24 solutions (1.0 ml each)	M-CS-504	\$216
JBScreen Plus Volatiles	24 solutions (1.0 ml each)	M-CS-505	\$216
JBScreen Plus Complete (All 5 Kits)	5 Kits	M-CS-506	\$887
JBScreen Plus HTS	96 Solutions (1.0 ml each)	M-CS-507L	\$787

Recommended Reading

- Herberhold *et al.* (2004) Effects of Chaotropic and Kosmotropic Cosolvents on the Pressure-Induced Unfolding and Denaturation of Proteins: An FT-IR Study on Staphylococcal Nuclease. *Biochemistry* **43**:3336.
- Batchelor *et al.* (2004) Impact of protein denaturants and stabilizers on water structure. *J. Am. Chem. Soc.* **126**:1958.
- Boström *et al.* (2003) Specific ion effects: Why the properties of lysozyme in salt solutions follow a Hofmeister series. *Biophys. J.* **85**:686.
- Uedaira *et al.* (2001) Role of hydration of polyhydroxy compounds in biological systems. *Cell. Mol. Biol.* **47**:823.
- Cacace *et al.* (1997): The Hofmeister series: salt and solvent effects on interfacial phenomena. *Quarterly Reviews of Biophysics* **30**:241.
- Von Hippel *et al.* (1965) On the Conformational Stability of Globular Proteins: The Effects of Various Electrolytes and Non-electrolytes on the Thermal Ribonuclease Transition. *J. Biol. Chem.* **240**:3909.

Crystallization Optimization - Chemical Environment

JBS Solubility Kit

The JBS Solubility Kit is a pre-crystallization screen to improve the composition of the initial protein buffer solution prior to performing crystallization set-ups [1]. Since the highly complex properties of proteins are dependent on their environment, buffer solutions play an important role, i.e. influencing the solubility and the aggregation behavior of the protein sample.

Studies have shown that aggregation of the protein may inhibit nucleation and crystal growth. Therefore, the JBS Solubility Kit has been developed to investigate protein samples towards their homogeneity and monodispersity prior to crystallization trials, employing hanging drop vapour diffusion experiments combined with dynamic light scattering.

The JBS Solubility Kit contains a set of 24 buffer solutions at different pH-values for setting up hanging drop vapour diffusion experiments in order to monitor the aggregation and precipitation of the protein sample, and a set of 14 additives used for further optimization employing dynamic light scattering.

Selected Literature Citations of JBS Solubility

- Gonçalves *et al.* (2011) Crystallization and preliminary X-ray analysis of mannosyl-3-phosphoglycerate phosphatase from *Thermus thermophilus* HB27. *Acta Cryst. F* **67**(3):390.
- Benvenuti *et al.* (2007) Crystallization of soluble proteins in vapor diffusion for x-ray crystallography. *Nature Protocols* **2**(7):1633.

Product	Amount	Cat. No.	Price
JBS Solubility Kit	1 Kit	M-CO-310	\$210

JBSScreen Detergents

JBSScreen Detergents can be used throughout the protein purification process or can be added afterwards by dialysis or ion-exchange chromatography (detergent exchange). Detergent exchange can be vital for obtaining well-diffracting membrane-protein crystals [1].

JBSScreen Detergents is also valuable for additive screening with detergents and detergent mixtures [2,3] in combination with the **JBSScreen Membrane**. This combination will enable you to screen a broad range of crystallization conditions, while concentrating on the most successful detergents - and therefore making crystallization screening of membrane proteins much more efficient and less time consuming.

24 detergents are supplied as stock solutions at 5 or 10 times the reported CMC (Critical Micellar Concentration), with 100 or 200 µl per compound. The recommended final detergent concentration in a hanging-drop experiment (prior to equilibration) is 1 to 3 x the CMC.

Product	Amount	Cat. No.	Price
JBSScreen Detergents	24 solutions (100 or 200 µl each)	M-CD-103	\$245



References

- [1] Rosenow *et al.* (2003) The influence of detergents and amphiphiles on the solubility of the light harvesting complex. *Acta Cryst. D* **59**:1422
- [2] Adir (1999) Crystallization of the oxygen-evolving reaction centre of photosystem II in nine different detergent mixtures. *Acta Cryst. D* **55**:891
- [3] Koronakis *et al.* (2000) Crystal structure of the bacterial membrane protein TolC central to multidrug efflux and protein export. *Nature* **405**:914

JBS Methylation Kit

Surface engineering of proteins can be a powerful technique for dealing with proteins that yield no or poorly diffracting crystals. In particular, reductive methylation of proteins has emerged as a standard procedure in several large scale facilities and research programs, i.e. the Midwest Centre of Structural genomics [1] and the Structural Proteomics In Europe (SPINE) program [2,3].

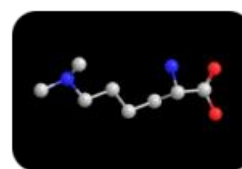
The **JBS Methylation Kit** is designed for **selective methylation of lysine residues**. The method does not require laborious cloning/ expression/purification but chemically replaces the protons of the amino group of all lysine residues with methyl groups. The result is a surface-engineered protein within 24 hours ready for crystallization.

Each **JBScreen Methylation Kit** contains all necessary reagents for six methylation experiments. All components are provided ready for use. Just follow the manual step-by-step. No background in chemistry necessary.

References

- [1] Kim *et al.* (2008) Large-scale evaluation of protein reductive methylation for improving protein crystallization. *Nature Methods* **5**:853.
- [2] Fogg *et al.* (2006) Application of the use of high-throughput technologies to the determination of protein structures of bacterial and viral pathogens. *Acta Cryst. D* **62**:1196.
- [3] Walter *et al.* (2006) Lysine methylation as a routine rescue strategy for protein crystallization. *Structure* **14**:1617.

Product	Amount	Cat. No.	Price
JBS Methylation Kit	6 reactions	M-CS-510	\$216



Selected Literature Citations of JBS Methylation Kit

- Barden *et al.* (2013) A Helical RGD Motif Promoting Cell Adhesion: Crystal Structures of the *Helicobacter pylori* Type IV Secretion System Pilus Protein CagL. *Structure* **21**:1931.
- Peat *et al.* (2013) Cyanuric acid hydrolase: evolutionary innovation by structural concatenation. *Molecular Microbiology* **88**:1149.

JBS Floppy-Choppy

JBS Floppy-Choppy is the rescue kit for proteins which are recalcitrant to crystallization. It enables the researcher to modify the protein target by *in situ* proteolysis to improve its crystallization behavior.

The method implies the addition of trace amounts of protease to the protein solution immediately prior to crystallization. Thus, the crystallization experiment is very straightforward. It can be set up without evaluating the efficacy of proteolysis, without stopping the proteolysis reaction and without purification of any proteolyzed protein fragments.

In situ proteolysis is one of the most efficacious crystallization rescue strategies used at structural genomic centers [1,2].

References

- [1] Dong *et al.* (2007) In situ proteolysis for protein crystallization and structure determination. *Nature Methods* **4**:1019.
- [2] Wernimont *et al.* (2009) In Situ Proteolysis to Generate Crystals for Structure Determination: An Update. *PLoS ONE* **4**:e5094

Product	Amount	Cat. No.	Price
JBS Floppy-Choppy	1 Kit	M-CO-110	\$190

Cryo Shutter

Crystal Annealing is a promising technique to improve diffraction quality of poor diffracting protein crystals.

The Cryo Shutter, developed by Dr. Uwe Mueller et al., MX-Lab at BESSY-II, HZB Berlin-Adlershof, is designed for crystal annealing at home sources:

- Precise interruption of the cryostream
- Timer controlled or manually triggered shutter operation
- Reproducible crystal annealing on the loop
- Minimal spacial requirements at sample position
- Extremely fast closing and opening of the shutter prevents turbulences

The Cryo Shutter Assembly Kit is available for Cryojet Systems (Oxford Instruments) as well as for Cryostream 700 Systems (Oxford Cryosystems).

Product	Amount	Cat. No.	Price
Cryo Shutter for Cryojet Systems	1 Kit	M-CC-330-19	\$1185
Cryo Shutter for Cryojet Systems	1 Kit	M-CC-330-19LTD	\$1185
Cryo Shutter for Cryostream 700 systems	1 Kit	M-CC-330-22	\$1185



JBS Beads-for-Seeds

Application: Preparation of seed stocks from protein crystals for microseeding applications. A highly polished glass bead and a microcentrifuge tube are used as mortar and pestle for crushing of seed crystals.

Format: 24 glass beads, each in a 1.5 ml microcentrifuge tube.

Features: Each glass bead is hardened and highly polished. The shape of the bottom of the microcentrifuge tube matches the shape of the bead to ensure effective crystal crushing.

Usage: JBS Beads-for-Seeds can be utilized to prepare seed stocks from protein crystals. Crystals and stabilizing solution are added to the highly polished glass bead in the microcentrifuge tube and the seed stock is generated simply by vortexing.

Adding a seeding solution to a crystallization experiment allows growing crystals in the metastable zone of the phase diagram. Further, the number and size of the crystals can be influenced by serial dilution of the seed stock [1].

[1] Luft *et al.* (1999) A method to produce microseed stock for use in the crystallization of biological macromolecules. *Acta Cryst. D* **55**:988.

Product	Amount	Cat. No.	Price
JBS Bead-for-Seeds	24 Glass Beads (each in 1.5 ml tube)	M-C0-501	\$62



JBScreen Cryo Pro

JBScreen Cryo Pro is the most convenient tool on the market for producing effective cryoprotectants from your crystallization reservoir solution. The kit contains 12 different compounds, divided into sugar/aminoacid-based cryoprotectants, alcohol-based cryoprotectants, and an oil-based cryoprotectant.

The predispensed samples of each solid and 50 µl of each liquid formulation are ready to be diluted with the reservoir solution. Crystals soaked in this reservoir solution/cryoprotectant mixture can be directly transferred to a liquid nitrogen bath or cryogenic gas

Product	Amount	Cat. No.	Price
JBScreen Cryo Pro	12 cryoprotectants	M-CC-102	\$205

LV CryoOil™



Applications

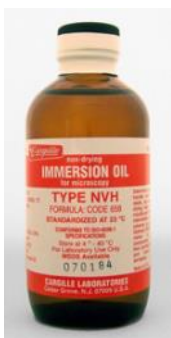
Removing external solvent from samples for lower background.
Preventing dehydration of crystals and drops.
Preventing ice formation in cryocrystallography.
Attaching small or fragile crystals to MicroMounts™ and MicroLoops™

Features

- Ultralow viscosity
- Low vapor pressure
- Excellent chemical inertness
- Excellent thermal stability

Description	Cat. No.	Price
LV CryoOil™ (1.5 ml vial)	LVCO-1	\$40
LV CryoOil™ (5 ml vial)	LVCO-5	\$55
LV CryoOil™ (50 ml vial)	LVCO-50	\$220

NVH Oil



Applications

Removing external solvent from crystals.
Preventing ice formation in cryo- and variable temperature crystallography.

Features

- Excellent Vapor Barrier
- Very High Viscosity
- Does not form diffraction rings when cooled
- Minimal background scatter

Description	Cat. No.	Price
NVH Oil (4 ounce bottle)	NVHO-1	\$18

JBS Tantalum Cluster Derivatization Kit

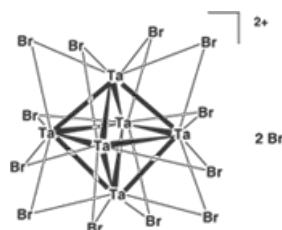
Application: Heavy atom derivatization of biological macromolecules for isomorphous and/or anomalous phasing methods.

Kit Contents: 6 pre-weighted solid aliquots of hexatantalum tetradecabromide at 1 mg.

The Tantalum Bromide Cluster, manufactured by Proteros biostructures GmbH, is utilized for the preparation of heavy-atom derivatives for structure determination of biological macromolecules by X-ray analysis.

This very electron-rich compound induces significant changes in crystal diffraction required for convenient phase calculation in single and multiple isomorphous replacement (SIR and MIR) experiments and in anomalous dispersion (SAD and MAD) experiments. The two present anomalous scatterers Ta and Br are useful for determining the cluster orientation for low resolution datasets. Tantalum Bromide Clusters have been successfully employed in several structural studies because of their high electron-density, solubility in aqueous solutions and stability over a wide pH range.

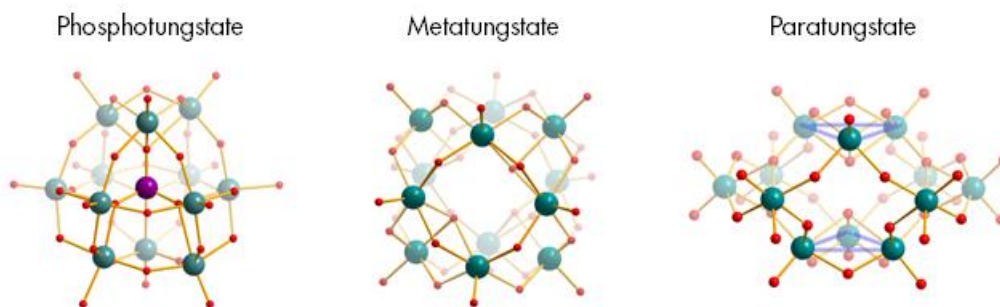
Product	Amount	Cat. No.	Price
Tantalum Cluster Derivatization Kit	6 mg (6 x 1 mg)	M-PK-103	\$360



JBS Tungsten Cluster Derivatization Kits

Application: Heavy atom derivatization of biological macromolecules for isomorphous and/or anomalous phasing methods. Polyoxotungstate clusters have been successfully employed in structural studies because of their high electron-density and very good solubility in aqueous solutions. **Kit Contents:** 6 pre-weighted solid aliquots of hexatantalum tetradecabromide at 1 mg.

The Tungstate Cluster Kits consist of 6 ready-to-use aliquots of Phosphotungstate, Metatungstate or Paratungstate salts, respectively. All Tungsten clusters contain 12 Tungsten metal centers bridged by Oxygen atoms, but differ in their resulting negative charge (3-, 6- and 10-, respectively).



Product	Amount	Cat. No.	Price
JBS Phosphotungstate Cluster Kit	21 mg (6 x 3.5 mg)	M-PK-105	\$310
JBS Metatungstate Cluster Kit	21 mg (6 x 3.5 mg)	M-PK-106	\$310
JBS Paratungstate Cluster Kit	21 mg (6 x 3.5 mg)	M-PK-105	\$310
JBS Tungstate Cluster Kit (contains 3 different clusters)	10.5 mg (3x 3.5 mg)	M-PK-108	\$220

JBS Magic Triangle

JBS Magic Triangle is a phasing kit developed in co-operation with Tobias Beck in the research group of Prof. George M. Sheldrick, Georg-August University Göttingen.

The “Magic Triangle” I3C consists of three iodine atoms forming an equilateral triangle with a side length of 6.0 Å that can readily be identified in the electron density map.

It has been demonstrated for heavy-atom derivatization of macromolecules, and experimental phases have been derived using single-wavelength anomalous dispersion (SAD) or single isomorphous replacement plus anomalous scattering (SIRAS) methods [1,2].

[1]Beck *et al.* (2008) A magic triangle for experimental phasing of macromolecules. *Acta Cryst.* **D64**:1179.

[2]Sippel *et al.* (2008) Structure determination of the cancer-associated Mycoplasma hyorhinis protein Mh-p37. *Acta Cryst.* **D64**:1172.



Product	Amount	Cat. No.	Price
JBS Magic Triangle	6 reactions 6 x 33mgI3C + 6 x 60 µl LiOH)	M-PK-104	\$222

JBS Halo Kits

The search for suitable heavy-atom derivatives can be quite tedious and binding of heavy atoms often results in disrupting the crystal lattice. Halogenated ATP and GTP analogs however, provide an alternative method that allows rational incorporation of heavy atoms into a large number of physiologically relevant enzymes:

- In the human genome alone, estimated 5,000 to 10,000 proteins interact with ATP or GTP, e.g. protein and nucleotide kinases, motor proteins, chaperones or the superfamily of GTPases, respectively.

- The incorporation of iodine or bromine allows MIR or MAD phasing for proteins with molecular weights of at least up to 50 kDa. Importantly, for MIR experiments, such derivatives are likely to be isomorphous to the native crystals

- The binding kinetics of 2'-halogenated ATP analogs to most enzymes so far investigated (including myosin, creatine kinase, hexokinase, pyruvate kinase and UMP/CMP kinase) are similar to those of non-substituted ATP.

- The complexes of 2'-halogenated GTP analogs with the GTPases p21ras or Rab5 have dissociation constants well suitable for crystallization.

- Several proteins including kinesin, non-claret disjunctional protein and TMP kinase have been successfully crystallized with 2'-halogenated analogs.

JBS Halo-ATP Kit: contains 12 halogenated Adenosine nucleotides (50 units* as lyophilized Sodium salts):

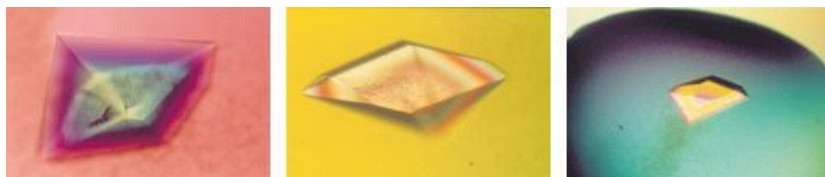
2'-Iodo-ADP, 2'-Iodo-ATP, 2'-Iodo-AppNHp (2'-Iodo-AMPPNP)
2'-Bromo-ADP, 2'-Bromo-ATP, 2'-Bromo-AppNHp (2'-Bromo-AMPPNP)

8-Iodo-ADP, 8-Iodo-ATP, 8-Iodo-AppNHp (8-Iodo-AMPPNP)
8-Bromo-ADP, 8-Bromo-ATP, 8-Bromo-AppNHp (8-Bromo-AMPPNP)

JBS Halo-GTP Kit: contains 6 halogenated Guanosine nucleotides (50 units* as lyophilized sodium salts):

8-Iodo-GDP, 8-Iodo-GTP, 8-Iodo-GppNHp (8-Iodo-GMPPNP)
8-Bromo-GDP, 8-Bromo-GTP, 8-Bromo-GppNHp (8-Bromo-GMPPNP)

* 1 unit = 1 µl of a 10 mM solution



Co-crystals of human TMP-kinase and 2'Br-ADP/AT

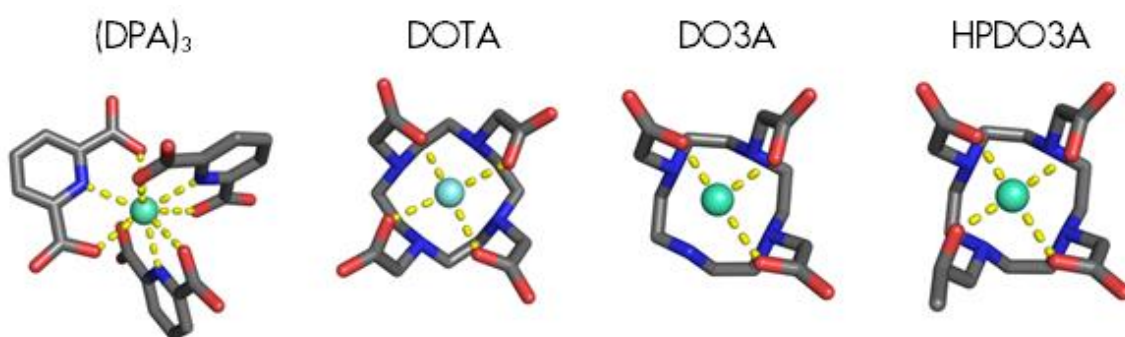
Product	Amount	Cat. No.	Price
JBS Halo-ATP Kit	12 Nucleotides (50 units each)	M-PK-101	\$635
JBS Halo-GTP Kit	12 Nucleotides (50 units each)	M-PK-102	\$412



NatX-ray Lanthanide Phasing Kit

Lanthanide derivatives of protein crystals are obtained either by soaking or co-crystallization. They can be used as strong anomalous scatterers due to the lanthanide LIII absorption edge.

Compounds based on Eu atom (LIII abs. edge: 6977 eV), Yb atom (LIII abs. edge: 8944 eV) or Gd atom (LIII abs. edge: 7243 eV) are available in the Lanthanide Phasing Kit. For upscaling your phasing experiment or using a particular complex only, single compounds are available



Product	Amount	Cat. No.	Price
Lanthanide Phasing Kit	10 compounds	M-CSM002-0001A	\$345
Gd-HP-DO3A	100 µl (500 mM)	M-CSM002-0002A	\$85
Eu-(DPA) ₃	1 ml (200 mM)	M-CSM002-0101A	\$145
Yb-(DPA) ₃	1 ml (200 mM)	M-CSM002-0102A	\$145
Eu-DOTA	200 ml (500 mM)	M-CSM002-0103A	\$135
Yb-DOTA	200 ml (500 mM)	M-CSM002-0104A	\$135
Eu-DO3A	200 ml (500 mM)	M-CSM002-0105A	\$145
Yb-DO3A	200 ml (500 mM)	M-CSM002-0106A	\$145
Eu-HP-DO3A	200 ml (500 mM)	M-CSM002-0107A	\$145
Yb-HP-DO3A	200 ml (500 mM)	M-CSM002-0108A	\$145
Eu-DTPA-BMA	200 ml (500 mM)	M-CSM002-0109A	\$135
Yb-DTPA-BMA	200 ml (500 mM)	M-CSM002-0110A	\$135

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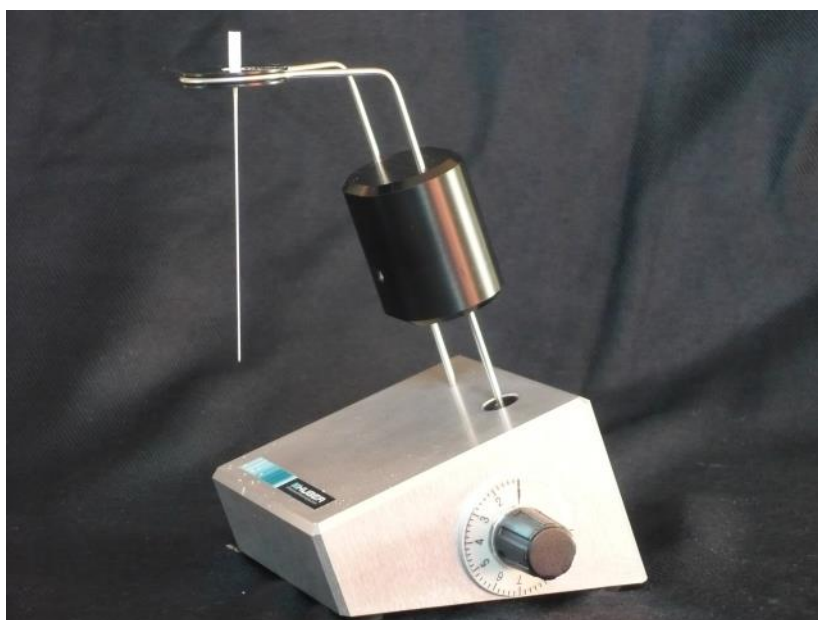
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Stereo Microscope Kits for Crystallographers

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MiTeGen Kit ST2000C Stereomicroscope kit for Crystallography: ZEISS Stemi 2000C Microscope: ZEISS Stemi 2000C body with 7:1 Zoom Focus Mounting Course for Stemi 2000C Stand N with 32 mm Column Eyepiece E-PI 1-x/20Br foc Folding Eye cups Dust cover IG Transmitted Light S for KL 1500/2500 Cold Light Source Zeiss CL 6000 LED (D) Analyzer for Objective Mounts for SV 6/11 Polarizer S for stage 455120	ZV20-MTGKST2000C	\$7,700
MiTeGen Kit V81 Stereomicroscope kit for Crystallography: ZEISS SteREO Discovery.V8 Microscope: ZEISS SteREO Discovery.V8 Microscope Body, Dust Protection Set M, Binoc Phototube Ergo Stereo 5-45, Eyepiece PL 10x/23 Br foc, Folding Eyecup, Stand base Profile S, Transmitted Light Equipment S Cold-light source Zeiss CL6000 LED - 6200K color temperature, - control of intensity & 6 memory positions, - filter slider for 2 filters 35x26x4mm, (filters sold separately) Analyzer S Rotatable, Polarizer D =84mm, Manual focus drive f/ Discovery, Mount S with 76 mm Diameter Support Achromat S 1.0x Reo WD=63 lens, 10 to 80 x magnification range	ZV20-MTGKV81	\$11,800
MiTeGen Kit V201 Stereomicroscope kit for MicroCrystallography: ZEISS SteREO Discovery.V20: ZEISS SteREO Discovery.V20 Microscope Body, Human Interface Panel HIP, Dust Protection Set M, Binoc Phototube Ergo Stereo 5-45, Eyepiece PL 10x/23 Br foc, Folding Eyecup, Stand base Profile S, Transmitted Light Equipment S Cold-light source Zeiss CL6000 LED - 6200K color temperature, - control of intensity & 6 memory positions, - filter slider for 2 filters 35x26x4mm, (filters sold separately) Analyzer S Rotatable, Polarizer D =84mm, Manual focus drive f/ Discovery, Mount S with 76 mm Diameter Support Achromat S 1.0x Reo WD=63 lens, 7.5 to 150 x magnification range	ZV20-MTGKV201	16,230



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