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technology llc



Book before
May 1st
and save
\$500

2-Day Hands-on Lyo Development & Analysis Workshop

A practical guide to lyophilization formulation, cycle development and analytical characterization

2-Day Intensive Laboratory Training | Small Group Format | Certificate of Completion

About the workshop

This immersive program guides participants through the complete lyophilization process – from formulation and thermal analysis to cycle development, optimization, and troubleshooting – in a real working CDMO facility.

Unlike training center environments, attendees work alongside the same team and equipment used in active commercial production.

What you'll learn:

- Apply thermal characterization (DSC, impedance analysis) directly to cycle design; understand how to generate and interpret the data necessary to build a stable lyo cycle
- Translate that analytical data into practical cycle development steps; understand how freezing, annealing, primary and secondary drying combine to give you a reliable and consistent end product
- Build and run freeze-drying cycles based on real-time PAT data
- Troubleshoot problematic cycles with structured strategies; what has gone wrong? How do you fix it?
- Evaluate lyophilization cake appearance and identify defects
- Perform post-lyophilization analysis: moisture content, thermal properties, mechanical performance
- Transfer cycles between lyophilizers and scaling up from research to production.

Why this course?

- Real CDMO facility, not a training center
 - Attendees work in an active commercial CDMO lab – gaining exposure to real production workflows, equipment, and the people behind them
- CDMO perspective on cycle development
 - Instruction is grounded in active commercial contract work – not just equipment operation
- Small group format with dedicated equipment per team
- State-of-the-art lab including demonstration of production-scale equipment (e.g. LyoBead Pro)
- Taught by Dr. Kevin Ward – R&D Director at Biopharma Group for 26 years and practicing lyophilization since 1993. Kevin and his team have worked on over 5,000 projects for more than 500 clients across the globe and run more than 400 training courses.
- Certificate of completion provided.

Who should attend?

- Scientists and engineers new to lyophilization looking for structured, hands-on foundational training
- Experienced lyophilization users seeking to deepen troubleshooting skills and cycle optimization techniques
- Process development and formulation scientists working on complex drug products
- Those evaluating or working with CDMOs who want a deeper understanding of the development process
- Anyone who is new to lyophilization, or considering using it to stabilize their product: gain hands-on experience in how to build a competent lyo cycle
- Anyone using lyo processes who does not use up-to-date thermal analysis or PAT technologies to understand their product and to maintain quality and compliance records
- Not all lyo cycles work at the first attempt; if you are producing an inconsistent product or think that your product quality and reliability could be improved then this course will point you in the right direction
- This course is aimed at those who involved in the lyo process as a research scientist, laboratory manager or technician or who has a QA/QC application to lyo processes.



Course schedule highlights

DAY 1

Thermal characterization of simple formulations (freeze-drying microscopy, impedance & MDSC analysis)



Formulation filling, loading & initial cycle programming



Evening networking event



DAY 2

Characterization of complex formulations



Critical evaluation of lyophilization cake appearance & defect identification



Cycle termination, sampling under controlled conditions



MDSC & Karl Fischer analysis of dried samples



Facility tour & lab equipment demonstration. Monitoring & analysis of completed samples (moisture content, thermal characteristics, mechanical properties)



Review of full workshop data & learning outcomes



Final Q&A and wrap-up



This is a hands-on program, not a lecture series. Concepts are explored through direct, practical involvement in our working facility guided by our expert team every step of the way.

About our instructors

Dr. Kevin Ward
Director of R&D



Biopharma Group's Director of R&D, Dr. Kevin Ward, is globally recognised as a lyophilization expert and has been actively working in the field of lyo technology since 1993, joining Biopharma Group in 2000. He's been involved numerous academic research projects and, together with his team, has worked on over 5,000 projects for customers worldwide. Kevin received his PhD for investigations into the freeze-drying of pharmaceutical formulations and drug/vaccine delivery systems.

Prior to joining the team, Kevin worked at Pfizer Central Research and as a Research Fellow in vaccine development at Aston University. Whilst working at Biopharma Group, Dr. Ward has become an editor and a contributing author of articles and texts on freeze drying, including the Springer book "Lyophilization of Pharmaceuticals and Biologicals". He is also in demand as a frequent lecturer to many of the leading regulatory agencies and prominent pharma companies.

David Banks
Chief Technical
Officer



Now based in California, David is Chief Technical Officer at BTLLC, having rejoined Biopharma Group in 2013 as a Senior Scientist following experience as a coordinator in the NHS and various analytical laboratories. David was promoted to the senior management team in 2016 having built up significant experience in the freeze-drying industry, providing analytical research, consultancy, alongside product and process development for customers worldwide.

Since then, David has helped expand Biopharma Group's technical portfolio, leading the growth of the R&D laboratories and assisting the move into diagnostic and GMP compliant pharma production. David particularly enjoyed his leading role in Biopharma Group's covid production campaign which saw 'all hands to the deck' and a large expansion in staff as the team developed and manufactured up to 100,000 covid tests per day throughout the pandemic.

Course agenda

Agenda day 1

Tuesday, June 9, 2026		
Time	Session title	Who
09:00	Welcome & Housekeeping Issues	KRW
09:15	Recap of Online Modules / Setting the Scene for this Workshop	KRW
10:00	Characterization 1 – Freeze-Drying Microscopy of Dextran solution	DB/CK
11:00	<i>Refreshment Break</i>	
11:15	Characterization 2 – Impedance and MDSC analysis of Dextran solution	DB/CK
12:00	Formulation filling, loading, programming lyo recipe, starting the lyo cycle	ALL
13:00	<i>Lunch Break</i>	
13:45	Characterization 3 – Freeze-Drying Microscopy of Complex Formulation	ALL
15:00	<i>Refreshment Break</i>	
15:15	Characterization 4 – Impedance and MDSC analysis of Complex Formulation	ALL
16:00	Discussion of Complex Formulation Data and Troubleshooting Strategies	ALL
16:30	Review of freeze-drying cycle for Dextran – making any tweaks to the process	ALL
17:00 – 19:00	<i>Networking Drinks and Food Truck at Burgeon Beer Co., Yarrow Dr., Carlsbad</i>	



Agenda day 2

DAY 2 – Wednesday, June 10, 2026		
Time	Session title	Who
09:00	Programming Secondary Drying; review of ongoing cycle	ALL
09:30	Critical evaluation of lyophile appearance – identifying features and defects	KRW
10:30	<i>Refreshment Break</i>	
10:50	Terminating Lyo Cycle. Sampling material for analysis under controlled conditions.	ALL
	Initiating MDSC and KF analyses for dried samples.	DB/CK
	Tour of facility and demonstration of other lab equipment (such as LyoBeadPRO)	ALL
12:45	<i>Lunch Break</i>	
13:30	Monitoring ongoing and completed analyses, including moisture content	ALL
	determination, thermal characteristics and mechanical properties.	
15:00	<i>Refreshment Break</i>	
15:20	Review of Workshop Data and Learning Outcomes. Final Q&A and Wrap-Up.	KRW
16:00	<i>Course ends.</i>	



Logistics & enrollment

Course location:

Biopharma Technology LLC

2270 Camino Vida Roble #K

Carlsbad, CA 92011

Date:

June 9-10, 2026

Availability:

8 Spaces — register early to secure your spot

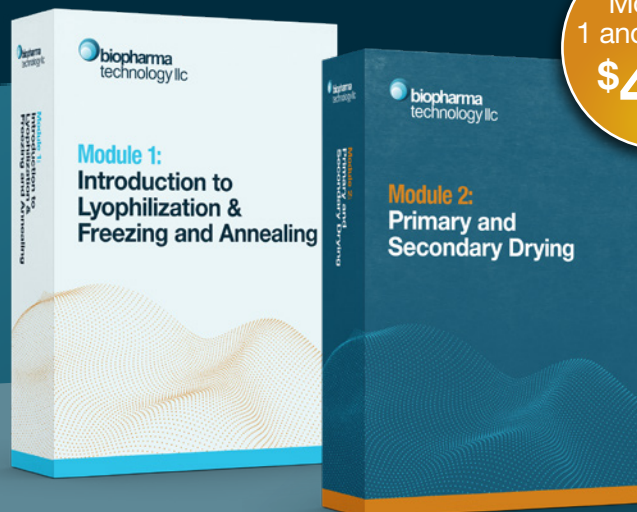
Inclusions:

On-site meals & networking event. Certificate awarded upon successful completion

Cost:

\$3,750 Early bird rate **\$3,250** until 1st May

Once the course is booked, attendees will be sent 2 x eLearning modules on the fundamentals of freeze drying that they will need to view prior to attending the course; these are included in the cost of the course.



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