APPLICATION NOTE 7

Fast track to return on investment

Looking to stay ahead of the game? In an increasingly competitive market, pharmaceutical companies are under constant pressure to get more new products and processes to market, faster, and with fewer resources. The key to success or even survival lies in effective innovation. The challenge is to dramatically increase R&D output and productivity to strengthen your company's intellectual property position and maintain a competitive edge. Innovation then becomes the driver for sustainable, profitable growth.

Improve and accelerate your crystallization research

Improve and accelerate your crystallization research with the Crystal16™ parallel crystallizer, the ultimate tool for solid-state research and process development. Designed by scientists for scientists, the Crystal16™ is a user-friendly multi-reactor benchtop system with intuitive software to perform medium-throughput crystallization studies at a 1-ml scale. It offers invaluable assistance throughout the various stages of the drug development life cycle, from preclinical screening to process optimization. Developed for crystallization studies, the Crystal16™ has also been successfully used in other application areas such as polymer solubility studies and process chemistry.

Crystal16™

Faster and more productive R&D

For medium and high-throughput technologies to effectively enhance the productivity of R&D, increasing the experimental throughput without at the same time increasing the analytical throughput will simply not do.

Not the execution of experiments is the limiting factor, but the design of useful experiments and the analysis of the vast amounts of data generated.

Technobis developed a solution that capitalizes on the advantages of high-throughput experimentation while avoiding its pitfalls, resulting in faster and more productive R&D.

Pioneer out of necessity

In 80 percent of all drugs, the active pharmaceutical ingredient (API) is used in crystalline form. 40 percent of all industrial crystallization processes are 'cooling crystallizations'. Not surprisingly, the industry invests heavily on crystallization research.

Faced with the same challenges as its customers and in the absence of suitable commercially available equipment, Technobis developed what has become a standard in crystallization research, the Crystal16™.

The first prototypes were successfully employed in customer projects, and in response to the many customer requests, Technobis decided to commercialize its unique tool. Industry feedback, customer suggestions and extensive development and fine-tuning through intensive internal use by crystallization experts have resulted in a tool designed by scientists for scientists, putting automation at the service of the user.

The best of both worlds

Designed for experiments at 1-ml scale it combines the best of both worlds. When used early in the drug development life cycle only small amounts of (expensive) compound are available. The 1-ml scale is sufficiently small and the smallest scale compatible with commercially available standard analytical equipment. At the same time it is large enough to provide flexibility in the choice of crystallization methods, allow normal stirring, and provide first indications of larger-scale process behavior, aspects that cannot be analyzed at the traditional high-throughput microliter scale.

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Join them, if you are still looking to stay ahead of the game!

Amgen, Astellas, Astra Zeneca, Bayer, Boehringer Ingelheim, Eisai, Eli Lilly, GSK, Ono Pharmaceutical, Pfizer, Genentech, Kissei, Organon, Sanofi Aventis, Schering Plough, Scios, Technologie Servier, Teva, UCB Celltech, Wyeth Pharmaceuticals and other leading pharmaceutical companies worldwide have successfully improved their R&D efficiency using the Crystal16™.

"Bench chemists have to perform the initial crystallization studies that will provide us with the information in an early stage of the process. With Crystal16™ and CrystalClear™ we have a technology in our hands to make this happen."

Head of Technology at a global top 5 pharmaceutical company

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Technobis
crystallization systems

What you see is only a fraction of what you get

Automating the execution of crystallization experiments means more experiments can be carried out in the same timeframe, but also, the results are much more reproducible, which is essential for good science.

- One for four
  The Crystal16™ consists of 4 independently temperature-controlled aluminum reactor blocks, each reactor block holding up to 4 standard disposable glass HPLC vials. Its operating software can be used to program and run each reactor block independently while data for each block is stored in a separate csv file allowing easy transfer to most standard offce PC applications.
  As a result, one Crystal16™ cannot only run multiple experiments in parallel; it can also be used by multiple users at the same time (one user per block), offering additional flexibility while increasing the efficiency and productivity of your resources.
- Analysis included
  The Crystal16™ not only runs 16 cooling crystallizations in parallel, it also analyzes them; in-situ turbidity measurements providing valuable information about the individual crystallization processes.
- Instant reporting
  The optional CrystalClear™ software package helps your scientists transform the data generated into meaningful information, graphically visualizing the data and generating comprehensive reports that can be easily exported to Word.
- Small is smart
  The absence of moving parts makes it extremely robust and low-maintenance. Compact yet powerful, this versatile benchtop system takes up only a minimum of your valuable laboratory space.

Double? Quadruple? Octuple!

- One scientist can typically perform 2 to 4 manual crystallization experiments per day.
- One scientist and one Crystal16™ can conduct 16 to 32 better-controlled, more reproducible experiments per day as well as analyzing them. An eight-fold increase in productivity!
- Similarly, one Crystal16™ shared by 2 or 4 different users quadruples or doubles your team's efficiency!

Versatile by design

From preclinical screening to process optimization, the Crystal16™ offers invaluable assistance throughout the various stages of the drug development life cycle. In the early stages it can be used to screen for different salts or polymorphs, while in later stages it can provide key information for crystallization process development and optimization such as solubility, metastable zone width and crystal growth.

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