

Choosing the right tool for method screening and process optimisation

CIM® Monolithic Well Plates combine the advantages of monolithic chromatography with the convenience of a standard well plate format. They ensure robustness and reliable results, making them ideal for screening multiple chromatographic conditions simultaneously or achieving high-throughput purification of your target molecule.



CELL AND GENE THERAPIES and vaccines rely on the production of large biomolecules, such as virus particles, vesicles, RNAs, plasmids and other forms of DNA. These modalities are rather new, compared to established drug platforms like small-molecule therapies and monoclonal antibodies. As a result, their processes are still in the early stages and they have common requirements, such as the need for improved, easily scalable processes with reduced cost per dose and increased manufacturing yields. These advancements would accelerate the path to clinical trials and commercial availability. CIM® (convective interaction media) monolithic chromatography products were designed with unique operating properties that perfectly meet these challenging requests.

CIM monoliths contain highly cross-linked, porous polymethacrylate with a well-defined channel size distribution. High surface accessibility of binding sites allows up to **10-times greater capacities** compared to other resin-based columns for large biomolecules, as well as rapid convection-based mass transfer. Due to very low shears, they are distinguished by up to **three times higher yields** for particles and large biomolecules compared to other purification resins. All CIM monoliths come prepacked and can be used multiple times. They are available in a variety of chemistries and sizes ranging from screening to commercial processing for higher yields and improved speed.

Monolithic well plates are available in standard 24- or 96-well formats. They serve as robust tools for the initial screening of process conditions, facilitating fast and efficient determination of binding, washing

and elution studies using a single type of monolith. Constructed from medical-grade polypropylene material, these plates prevent target molecules from binding to the plastic surface. Additionally, the well plates feature a tip geometry designed to minimise cross-contamination within the elution plate. Moreover, each well comes prefilled with a defined volume of monolith, ensuring uniform **high flow rates** across the entire plate. The monoliths in well plates have the same properties as higher-volume monolithic columns. This feature enables significant time savings by allowing simultaneous screening of multiple conditions and easy scaling-up to preparative scale, such as the CIMmultus product line.

Increasing productivity with simple solutions

The monolithic well plates are a robust and easy-to-use tool, serving as a convenient industrial platform. Designed following ANSI/SLAS microplate standards, they are compatible with vacuum manifold, centrifuge and positive pressure systems, enabling adaptation to automated workflows. Each well contains a CIM monolith that enables high flow rates across the plate, with high capacity and yields. Their multi-parallel approach, quick processing time, and reduced sample consumption contributes to increased productivity.

Versatility and seamless adaptability

Monolithic 24- and 96-well plates offer a wide range of chemistries, including ion-exchange, affinity, activated chemistries, hydrophobic, hydrophilic, and more. These plates are

available in 0.05, 0.2 and 1.0mL monolith volumes and monolith-related channel widths. They can be used as disposable or multiuse.

Robust performance, reproducible results

The monolithic well plates undergo rigorous statistical evaluation to assess plate-to-plate and well-to-well variance. The screening process is highly robust, delivering reliable results with low variance, maintaining RSD below 10 percent across the entire plate. In particular, the CIM SO3 0.05mL Monolithic 96-well Plate (with 2µm channels) demonstrated a remarkable RSD value of 1.4 percent for the dynamic binding capacity (DBC) of lysozyme. ☒

The perfect starting point for easy scale-up

These well plates serve as a perfect starting point for straightforward scale-up to preparative chromatographic processes, such as the CIMmultus product line operated by chromatographic skids. The generated data exhibits a strong correlation with results obtained from 1mL chromatography columns. Given this performance, the 96-well plates are an exceptional tool for initial process condition screening, facilitating efficient and rapid determination of binding, washing and elution studies.

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Reliable Results. Faster.



CIM® Monolithic 96- and 24-Well Plates



- Increased productivity by quick processing time and reduced sample consumption
- Automation compatible - manufactured in accordance with ANSI standard
- Can be operated by vacuum manifold, centrifuge and positive pressure
- Low well-to-well and plate-to-plate variance ensures robustness and reliable results

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The right chromatography tools for the right tasks - and the skills to use them. That's who we are. Sartorius BIA Separations