



INDUSTRIALIZING PURIFICATION USING CENTRIFUGAL PARTITION CHROMATOGRAPHY

#CPC #centrifugal partition chromatography #scale-up #bioprocess
#pharmaceuticals #biotechnology

Centrifugal Partition Chromatography (CPC) is known for its laboratory applications. Under certain conditions, it can also be used at the industrial scale. But changing the scale involves taking specific precautions and requires the skills of an experienced team. A pharmaceutical laboratory recognized Capacités' experts' knowledge in the field of CPC. The lab asked them to determine and approve conditions for the industrial-level scaling of an operation for purifying an active ingredient.

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SCALING UP A CENTRIFUGAL PARTITION CHROMATOGRAPHY OPERATION TO THE INDUSTRIAL SCALE

A key player in the pharmaceutical industry recognized Capacités' expertise in Centrifugal Partition Chromatography and its experience with scale-ups. The company chose Capacités' experts to industrialize a CPC purification process for an active pharmaceutical ingredient. During the first laboratory testing phase, Capacités' process engineers characterized the working conditions and performance of the client-developed CPC equipment. By using tracking methods and modeling, they could save the client's raw material and plan the adapted larger-scale conditions. The values obtained during these first tests were used in a digital simulation tool, allowing the engineers to determine the optimum duration for the purification operation, as well as the achieved degree of purity.

During a second testing phase, they carried out the experimental approval of the optimized process directly at the client's site, using its own raw material. They achieved the purity and yield objectives set by the client; purity exceeded 85% and yield was over 90%. This was consistent with the results obtained in the laboratory. Capacités' experts approved the invariable factors of scaling up, the conditions for reproducibility and the robustness of technology at the industrial scale.

To successfully complete this project, the Capacités' experts benefited from support and technical equipment from the GEPEA laboratory, joint research unit of the University of Nantes, Oniris, IMT Atlantic and CNRS (The French National Centre for Scientific Research). ■ □

Expertises:

- Health
- Industry

CAPACITÉS

Created in 2005, Capacités is the private engineering and research valorisation subsidiary of the University of Nantes. It employs 90 employees, mainly engineers and PhDs, who work directly with scientists in the research laboratories.

