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## PURIFYING AN ACTIVE SUBSTANCE FOR THE PERFUME INDUSTRY

#CPC # centrifugal partition chromatography #distillation #purification process #unit operation #perfumery #scent

Gilson is an international group that actively develops purification solutions and manufactures purification equipment. The company chose Capacités to prepare an active substance intended for the perfume industry. Gilson wanted to industrialize a method that had been developed for one of its international clients; it consisted of purifying a crude extract in order to extract and concentrate a specific molecule. The goal of Capacités' bioprocess engineers was to compare several methods and determine the most effective enrichment process.

### COMPARING AND TRANSPOSING A CPC ENRICHMENT METHOD

Capacités' experts provided a complete response to Gilson by testing and comparing five different enrichment processes. They wanted to find the one that best concentrated the specific molecule to be isolated.

They first tested distillation and stripping methods, followed by multistage cross-current liquid-liquid extraction. In this third process, the crude extract passed through a series of decanters or centrifuges for extraction. Each extractor processed the raffinate from the extractor before it.

The experts from Capacités also tested two methods of centrifugal partition chromatography (CPC). They varied the solvent type and quantity for each method. Gilson retained the method that allowed 40% purity to be achieved and over 90% recovery. Another

advantage of this method is that the solvent can be easily reused. Capacités' experts then worked with the client to transpose the selected method into its pilot system. They ensured that the results obtained in the laboratory were reproducible. The projected numbers have met expectations, and this method will allow up to eleven tons of raw material to be processed yearly with a Gilson CPC industrial column.

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

#### Expertises:

- Bioprocess engineering
- Centrifugal partition chromatography

#### 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.



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