

Repurposing Materials



Active
ingredient
extraction

CRIQ has developed specific techniques to extract active ingredients from plant-based, forest, marine, and agri-food production biomass residues. Using specialized equipment we are able to conduct R&D on a semi-industrial scale.

Avoid losses and optimize production by reducing your biomass disposal costs. Repurpose your products by creating bioproducts.

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Active ingredient extraction

OUR SERVICES

- Development, improvement, validation, and upscaling of solvent-based active ingredient extraction processes
- Assessment of various process parameters: solvent type, solvent-to-feed ratio, extraction temperature, stirring speed, extraction time, etc.
- Purification, separation, and stabilization of product extracts
- Selection, choice validation, and specifications for equipment needed to implement in-plant processes
- Technical and economic assessment of processes

SPECIALIZED EQUIPMENT AND INFRASTRUCTURE

CRIQ has a pilot plant for conducting process-upscaling tests:

- Cutting mills, grinding mills, and ovens for preparing biomass
- Extractors equipped with high-efficiency homogenizers with a capacity of 5 to 500 litres
- 80-litre Tournaire S.A.-type, stirred-batch pilot extractor
- Supercritical CO₂ extractor (500 ml and 4 litres) with the option to use co-solvents
- Membrane separator with plane, spiral-wound, hollow fibre, and tubular modules for micro, ultra, and nano-filtration with operational flow rates up to 20 litres per minute
- Solid-phase extraction columns up to 30 cm in diameter
- 100-kilogram-capacity filter press
- Solvent vacuum distiller with an evaporation capacity of 100 litres per hour
- 100-litre-capacity vacuum reactor to remove residual solvents
- Rotary vacuum evaporator with a capacity of 500 ml to 20 litres
- 200-litre-capacity fluid bed dryer
- Analysis laboratory equipped with LC/MS/MS, semi-preparative LC, LC/MS, 4 GC/MS (including a system with an olfactory port) and FTIR
- 60-centimetre-diameter centrifuge with a 16 kg capacity for solids



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Examples of previous projects:

- Creation of value-added products from fruit residues—polyphenol concentrates (cranberries, apples, oranges)
- Extraction of complex lipids from marine biomass
- Bioactive terpene-based concentrate from alfalfa
- Extraction of lipids from sea-buckthorn
- Extraction and purification of anthocyanins from wild blueberries

For advice or information concerning active ingredient extraction:

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